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ILLUSTRATIONS.

Fonts, Siena Cathedral.—Drawn by Mr. J. B. Fulton (R.I.B.A. Tite Student, 1899) ..... *Double-Page Ink-Photo.*
Sketches in Italy.—By Mr. J. B. Fulton (R.I.B.A. Tite Student, 1899) ..... *Double-Page Photo-Litho.*
The Leicestershire Banking Company's New Premises, Bedworth.—Messrs. Goddard & Co., Architects ..... *Double-Page Ink-Photo.*
Design for a Country House.—Mr. Pieter Rodeck, Architect ..... *Double-Page Photo-Litho.*

Blocks in Text.

John Rylands Library, Manchester. Plan or Main Floor ..... Page 78
Illustrations to "Student's Column" ..... Page 90
Diagrams illustrating "Legal Topics of Interest to Architects and Surveyors" .....Pages 82, 83, 84

CONTENTS.

Ruskin's Influence on Architecture 73
The Institute Students' Competition Drawings 74
Notes 75
The Royal Institute of British Architects 77
The Architectural Association Discussion Section 81
The Architectural Association: Paris Exhibition Prize 81
Legal Topics of Interest to Architects and Surveyors 81
Donations to the Building Trades' Gift 85
Building Trades' Gift to the Nation 85
The Artists' War Fund Exhibition 86
Illustrations:—
Fonts, Siena Cathedral 86
Sketches in Italy 86
Front of Bank, Bedworth 86
Design for a Country House 86
The London County Council 86
Applications under the London Building Act, 1894 88
Archæological Societies 89
Books Received 89
Correspondence:—
Fire-Resisting Floors 89
Decay in New Churches 89
"Another Strange Competition" 89
The Student's Column.—Details of Structural Iron and Steel .. 89
Obituary 91
General Building News 91
Sanitary and Engineering News 92
Stained Glass and Decoration 92
Foreign 92
Miscellaneous 92
Capital and Labour 93
Legal:—
Case under the 1894 London Building Act 93
Painting inside Gutters 93
Action for Injuries 93
Action against Architects 93
Is a Show-case a Building? 93
Point under the Workmen's Compensation Act, 1897 94
Important Action against an Architect 94
Architect's Conditional Fees 94
What is "an Accident"? 94
Recent Patents 94
Meetings 95
Some Recent Sales of Property 95
Prices Current of Materials 95

Ruskin's Influence on Architecture.

THE death of Mr. Ruskin can hardly be said, in one sense, to mark his removal from among us. For some time past he had been, so far as the general public are concerned, a voice of the past rather than of the present; he had said his say to his generation in many volumes full of ardent thoughts expressed in ardent words; and the actual close of his life is an event which more immediately concerns those who were near to him and knew and loved him personally, than the general public of his readers, who had ceased to look for further utterances from him.

Even to these latter, however, the news of the final extinction of such a life—a life passed entirely in passionate aspiration after all that seemed to him to be beautiful, noble, and true, and in the endeavour, not certainly without success, to awaken the same aspiration in others—must be occasion for some sympathetic reflection on the real meaning of such a phenomenon (for it is nothing less than phenomenal) as the presence, in this business-like, calculating, scientific century, of a writer like Ruskin. What was it really that he wanted? What was it that he accomplished?

What it was that he really wanted it would perhaps be rather difficult to say, and he might have found it difficult to define it himself. It might be best summed up, perhaps, by saying that he wanted to see more beauty in modern life; not only artistic but moral beauty. His many-coloured aspirations, often apparently contradictory in detail, might all be translated into that general term. Often, indeed, and more especially in regard to modern social life, his persuasion that something (or everything) was wrong was a great deal clearer and more decisive than his proposals for putting it right. And in his often fierce denunciation of the characteristic uglinesses, material and social, of the nineteenth century, he entirely failed to see that it has some characteristic advantages also. His was not a robust nature; there was something feminine about his intellect, both in his intensity of feeling and in his inconsistency and his inability to see both sides of a question. He could see, for instance, what most of us can see, that railways have to some extent spoiled the character and the quiet of rural scenery, and that in the process of making they always bring ugliness temporarily at least into the landscape (the permanent disfigurement of the country by railways we hold to have been much exaggerated, by others besides Ruskin). But he could not recognise the enormous advantages to human progress and education brought about by more rapid and cheaper travelling, any more than he could see the real grandeur and impressiveness of such a splendid creation of human genius as a locomotive engine. He dreamed a dream, and his dream was of a picturesque mediæval England, with people in picturesque costumes each expressive of his rank and calling, and processions of *rosiaires* with their happy bridegrooms; and he could not see that he was wanting what is as impossible as for a grown-up man to be content with the garments and the playthings of his childhood. The child is often, no doubt, much more attractive than the man, and much more innocent; but the work of the world has to be carried on by men; and the century can no more go back to childhood than the individual.

It would be easy to show how, amid all this Utopianism, he is constantly flashing upon us sudden lights in regard to nobility of aim in life, the realisation of which is quite independent of the social customs of one age or another; as in the passage (we forget at the moment in which of his works) in which he asks woman to contrast the beauty and sacredness of motherhood with the empty pleasure of fine dressing or "precedence," or that in which he symbolises the best ideal of a man's life in the pregnant remark that a man should desire to be captain of a man-of-war because it is a glorious task to conduct or manœuvre such a vessel, not because he covets the rank and title of "Captain." One might adduce instance after instance of this kind of enunciation of noble principles of life, often the more striking from the unexpected manner in which they crop up, sometimes in no apparent connexion with the immediate subject. But our concern is more especially with the question—what did Ruskin do for art, and for the art of architecture more particularly?

And the answer is, that he made numbers of readers feel its interest and importance in a way they had never felt it before. Ruskin, let it be said most emphatically, is no guide and no critic in art; least of all in architecture. He does not really appear to have had any fixed principles in regard to art; his only principle was that of saying the most effective and picturesque thing that occurred to him at the moment. He is not a writer to go to for "information" about architecture, as many amateurs fondly imagine. The "Stones of Venice" is, as far as the facts about architecture are concerned—whether about architecture generally or that of Venice in particular—a perfect medley of inaccuracies, contradictions, and exaggerations. The "Lectures on Architecture" is one of the most mischievously misleading books ever written on the subject. The "Seven Lamps" is full of fallacies, some of them thrown overboard by the author himself in curt characteristic foot-notes to the later edition. But he was the first English writer on art who has had literary genius enough to make himself widely read for his mere style and eloquence, and to reach masses of persons who had never read a book upon art before, and never would but for him. Many of these, no doubt, are entirely deceived as to the value of Ruskin's critical utterances; they accept his rhetoric as argument, his fallacies as facts; and much which is new to them they think must be new to every one else. But Ruskin has made them care about it; and that, if it is not everything, is at least much, and has not been without a wide influence for good on the present generation.

And the influence which Ruskin has had for good upon architects, and may still have, is of the same nature. He has taught us nothing, indeed, in one sense. The Vice-President of the Institute of Architects, in his remarks from the chair at the meeting last Monday, implied that we owed to Ruskin the perception of the necessary relation between the plan and structure of a building and its exterior design. We do not think Ruskin ever took so logical a view of architecture as that would imply; we should be more inclined to trace it to Pugin; it dates from before Ruskin's advent on the scene. But though he teaches us nothing, he arouses our enthusiasm. It may be said of him as Wordsworth said of his "Solitary"—

"He had received
From Nature an intense and glowing mind."

There is perhaps hardly an "aphorism" or a principle laid down in the "Seven Lamps of Architecture" which might not be open to question; there is no information in it which can assist an architect in carrying out his work. But no one possessed of feeling and imagination can turn over its pages without feeling his enthusiasm stimulated, his ideas of the possible glory and greatness of architecture quickened and intensified, his perception of the essential qualities of great architecture extended. He must beware indeed of being taken in by the false rhetoric of some passages, such as the futile idea that "the addition of an unnecessary feature, such as a cable moulding," transforms a plain structure like a bastion into architecture; a dictum which might be the parent of a whole tribe of false conclusions. It is in details of analysis that Ruskin goes wrong, and even condemns himself over and over again; it is in general exhortation that his power lies. "All old work nearly has been hard work. It may be the hard work of children, of barbarians, of rustics; but it is always their utmost. Ours has always the look of money's worth, of a stopping short wherever and whenever we can." Could there be a more telling statement of the difference we constantly feel between ancient and modern architecture? The remark on the use of metal in architecture, that it may be used "as a cement but not as a support," is a fine summary of the instinctive feeling one has as to the unmonumental quality of iron and steel construction. "I believe no cause to have been more active in the degradation of our national feeling for beauty than the constant use of cast-iron ornament." The mere form of statement, in a literary sense, is sometimes such as to make us perceive a thing in a new light; as in his description of the change from mere perforated windows (geometrical tracery) to flowing tracery. "Up to the last expansion of the penetrations the stonework was considered, as it actually is, *stiff*, and unyielding. . . . At the close of that period of pause, the first sign of the serious change was like a low breeze, passing through the emaciated tracery and making it tremble. It began to undulate like the threads of a cobweb lifted by the wind. It lost its essence as a structure of stone." Further on, what an eloquent plea for the glory of breadth and mass in architecture;—

"As regards abstract power and awfulness, there is no question; without breadth of surface it is in vain to seek them; and it matters little, so that the surface be wide, bold, and unbroken, whether it be of brick or of jasper; the light of heaven upon it, and the weight of earth in it, are all we need; for it is singular how forgetful the mind may become both of material and workmanship, if only it have space enough over which to range, and to remind it, however feebly, of the joy that it has in contemplating the flatness and sweep of great plains and broad seas."

Who could get to work to design in a small and niggling manner after letting such a sentence as that sink into him? This reference of architecture to the analogies of nature is at the bottom of a great deal of Ruskin's magic; he seems to say "you have all around you great things in nature; will you be content to build little ones?"

"Among the first habits that a young architect should learn is that of thinking in shadow, not looking at a design in its miserable liny skeleton, but conceiving it as it will be when the dawn lights it and the dusk leaves it; when its stones will be hot and its crannies cool; when the lizards will bask on the one and the birds live in the other. Let him design with the sense of cold and heat upon him; let him cut out the shadows, as men dig wells in unwatered plains; and lead along the lights, as a founder does his hot metal; let him keep full command of both, and see that he knows how they fall and where they fade. His paper lines and proportions are of no value" [a query may be put to that, however]: "all that he has to do must be done by spaces of light and darkness; and his business is to see that the one is broad and bold enough not to be swallowed up by twilight, and the other deep enough not to be dried up like a shallow pool by a noon-day sun."

It is in passages like these that we feel Ruskin's influence on architecture; the way in which he raises and glorifies it, and treats it as something akin, or which may be so, to the breadth and beauty of nature itself. "Until that street architecture of ours is bettered, until we give it some size and boldness, until we give our windows recess and our walls thickness, I know not how we can blame our architects for their feebleness in more important work; their eyes are inured to narrowness and slightness: can we expect them at a word to conceive and deal with breadth and solidity?" "An architect should live as little in cities as a painter. Send him to our hills, and let him study there what nature understands by a buttress, and what by a dome." This last sentence is, we fear, a rhetorical fallacy; it ignores the fact that architecture is a shaping power, and Nature, in the same sense, is not; but it is a rhetoric that at least feeds the fancy and imagination.

This is the real power which Ruskin has exercised in regard to art. He has, as far as words could do it, inspired us, and that is what we have mainly to thank him for. His reasoning is constantly wrong and contradictory, his facts incorrect, his analysis misleading; but his enthusiasm is always right, and his expression of it always, in Wordsworth's phrase, "intense and glowing," for of his literary genius it would be impossible to say too much. Among writers on art he is, in this respect, first—and the rest nowhere. He never writes a sentence which does not seem to bear his signature, not at the end, but all through it. What has been said of Beethoven as a composer may be said of Ruskin as a writer—he never has any "filling-in" passages; everything is at a glow of earnestness. In this respect his collected writings form one of the most remarkable literary phenomena of modern times. Their wonderful variety of interest, their sweep of metaphor and illustration, the manner in which at the least hint he turns aside for a moment to fling out winged words on some extraneous subject suggested by the one he is dealing with—all this furnishes a kind of intellectual spectacle of ever-changing colour and vivacity which is quite extraordinary. It is curious too to note how, in the later editions of his works, he himself seems to stand apart and contemplate the spectacle from his later point of view—as much interested in his own writings as any of his readers can be. We do not think this can be called vanity; it is intensity of feeling. Everything in life and nature interested him, himself included. No more eloquent counterblast to the wretched gospel of *nil admirari* was ever put forth. He may not have guided our intellects much—he has unquestionably misguided them in some instances, or would have done so if he had been listened to. But he has fired our hearts and feelings as no other writers except great poets have done. He was, in fact, a great prose-poet, taking for his subject the beauty of art and of nature; and perhaps it is in that light that he will principally be regarded by after ages.

THE INSTITUTE STUDENTS' COMPETITION DRAWINGS.

THE Soane medallion is by far the most important of the Institute competitions for Students, since it is the only one in which the problem is presented of planning and designing a large building for a special object. This year a School of Art situated in a public park is the subject given. It is unfortunate that the show of this year serves again to remind us how far behind the French we must be in architectural education, if we judge by comparing the results of our best prize with the kind of drawings which obtain the Prix de Rome at the École des Beaux-Arts. It is possible that the competitors for the Prix de Rome are pupils who average a greater age than those who compete for the Institute prizes; but it seems indubitable that they are better educated in architecture and that the standard of prize designs is higher than we can show. In fact, we fear that Paris students would make rather a mock of the drawings submitted for the most important prize the Institute of Architects have to offer.

The prize could not well have been given to any other design than that signed "St. Barbara," by Mr. Cyril E. Power, to which it has been awarded. As an architectural drawing, and as a piece of architectural scenery, his perspective view is quite in advance of any other drawing among those submitted. The author has taken the instruction that the building was to be "in a public park" as an excuse, and a perfectly valid one, for placing it by the side of a lake, and showing it mounted on a lofty podium and approached by stately flights of steps from the water. The treatment of the upper portion of the building is very happy; dignified in effect and unostentatious in style. So far all is well; but when we turn to the plan we find that it has little relation to the elevation; the projections at each end of the latter represent no feature arising out of the plan, they are merely projections of a portion of a room on the main floor, made without rhyme or reason for the

sake of effect, and on the ground floor plan the author seems to have been puzzled to know what to do with them at all. This is such a dire fault—it cuts so much at the very root of architectural design, that in our opinion, whatever the merit of the perspective as a drawing and as a piece of effect, the prize ought to have been withheld, as the only practical manner of compelling students to recognise that architecture means design arising out of and expressing a plan, and not a mere piece of effect independent of it.

Of the other designs perhaps the best is the one marked by a banner in an oval; the detail is weak but there is a good deal of character about the general design, and the plan, though a little eccentric, has an idea in it and is not a mere collection of apartments. "Inesperata Floruit" has also rather a good plan, and the treatment of the large hall, as indicated in the section, is good. "Pomegranate" sends a spirited perspective sketch, in a rather exaggerated style—the projections seem too great everywhere; and it does not agree with the plans and elevations. There are clever points in "Hildreth," though to put a large circular vestibule, or rather hall (with a dome over it which is the principal feature of the design) at the re-entering angle of an L-shaped plan, is rather putting the emphasis in the wrong place. The two smaller cupolas appear to have no special meaning unless it be to mark the positions of the water-closets on the ground floor; which is also emphasis in the wrong place.

The Tite prize drawings are a more satisfactory subject of contemplation; the problem of course is easier, for as the subject was simply "a clock tower," the element of plan is reduced to its simplest form; and there are several designs which are original, effective, and pleasant to look at. There can be no doubt that the most striking and powerful design in the room is that by Mr. W. A. Mellon, signed "Bow Bells," to which a medal of merit has been awarded. It has the defect that it appears to overhang at the top, owing to its entirely vertical line, but it is a remarkable drawing, and would probably have had the prize had it been Italian architecture, which it is not, but a rather corrupt Free Classic. It is right that the Tite designs should be kept within the line intended by the founder of the prize; not only because it is an absolute duty to carry out his wishes with integrity, but also because there can be no doubt that Tite wished to promote the study of that phase of Renaissance architecture which is specially labelled "Italian," on account of its refining and soberising influence, and as an antidote against the taste for crude novelty for novelty's sake; and even if we were to cease altogether to practise this style of architecture, its refining influence as a study would remain the same. As to the actual award of the prize to the design by Mr. Percy E. Nobbs bearing the motto "Edificaturus," there will probably be differences of opinion. Though a good drawing, it is perhaps one of the least original and striking designs in the collection; it might even be called commonplace; but on the other hand it is the one with fewest faults, and we feel convinced that it is the one Tite himself would have selected. The rusticated basement is rather weakly treated, and we do not much admire the form of horizontal rustication adopted for the stalk portion of the tower, consisting of projecting bands of the section of a small segment of a circle. Nor have we ever liked that manner of getting from the square of the tower to the octagon of the lantern, by a concave broach—something like a gigantic chamfer-stop, but this can hardly be attributed as a fault to the author; in Malvolio's words, "there's example for it," and in plenty too; but it is a device which always strikes us out of scale, like a small detail magnified. It may be a question whether the proportions of the design would not have been improved if the stalk had been somewhat lengthened and the lantern portion proportionately shortened (of course with a little modification in the scale of the order employed here); but this may be matter of opinion. It should be added that the section and the plans of the various stages of the tower are better worked out in this than in any other design submitted; the clock face is also in the right proportion. The average rule for clock faces is—one foot in width for every ten feet from the ground; some of the competitors evidently do not know this; in "Sphinx," for instance, the height to the centre of the clock face is seventy feet, and the face is only four-and-a-half feet diameter, which is quite inadequate. Mr. Nobbs's drawing is shaded in monochrome brush-work, with a background showing a portion of a town, in an effective and artistic manner. On the whole we believe this is the right choice, though the selection will perhaps cause surprise at first sight, and before the others have been carefully examined.

Among the other Tite designs "Oxon" is the only one which we think might dispute the prize with "Edificaturus," and some may think it has the best claim; it is a more original design, but on the other hand it has not so much unity and coherence of treatment, and shows points that are more open to criticism. The entablature and small order standing free, with a statue on the top, at each angle below the crowning stage, is very naïve; yet possibly, had this been done in an ancient tower, a good many people would have sketched it. At all events we should say that this design ought to have had the medal of merit, as being within the definition of "Italian architecture." Among the others, "Meg," in which the tower rises from the centre of a square-columned loggia, and terminates in an obelisk above the cupola, is a very clever and original sketch, but we should suggest that the domed cupola with that massive obelisk on it would require iron ties at the springing to make it safe. "Kudos" is an eccentric but clever sketch rather of the same school, but not so good. "Sphinx," before referred to, is a very charming design, but hardly suggests a clock tower; it is too narrow—a kind of obelisk with a pretty cupola on the top; and as already observed, the clock face is too small.

The Grissell Medal has been rightly awarded to Mr. Varndell, out of the four competing; but we cannot help thinking that for the last two years there have been symptoms of a certain forgetfulness of the original object of the Grissell Medal, which was the study and setting of a piece of difficult construction, and that this prize also is becoming too much dominated by the picturesque element—delightful in its place, but not required here—and that we could have done with larger and more complete drawings of the setting-out of the stone work.

There will probably be divergence of opinion as to the award of the Owen Jones Studentship also, which must have been a difficult one to decide; but here, as in the case of the Tite prize, a careful examination is likely to confirm the award. It is true that some of Mr. Paterson's interior views are hardly in place here, as they do not show the real colour but only the pictorial effect of a coloured building, and his show of drawings is smaller than those of two or three other competitors; but the real object is to give it to the man who evinces most feeling for colour, and Mr. Paterson's details of the stalls at S. Domenico, Bologna, show more delicate perception of colour than any other drawing in the competition for this prize, though Mr. Fulton and Mr. Rutherford merit every appreciation for their fine and elaborate series of rather hardly coloured drawings.

With the award of the Pugin Studentship to Mr. MacLachlan we are entirely in accord; he has submitted some beautiful drawings; we like very much also some of those by Mr. J. Forbes Smith and Mr. H. Rames; the interior sketches of cathedrals by the latter are very good, especially Chartres. Mr. Fulton gains the silver medal for measured drawings, among which however the best drawing is his striking perspective of the gateway of St. John's, Oxford, which can hardly be included under measured drawings. As far as the measured drawings go there is not much to choose between him and Mr. Triggs, who obtains the certificate.

Mr. Fulton's drawings made as Tite student are a very remarkable collection, showing not only great powers of draughtsmanship but (what is more rare) a distinct and marked *style* in drawing. We do not know, however, whether there is not, in some of the line perspectives of exteriors, a little too much of a kind of conscious imitation of the manner of old Renaissance drawings. No doubt it is by this harking back to an old fountain head that the basis of a new style of execution is often laid (there have been other examples of this); but anything like archaism is to be avoided. The sketch of the arch of Constantine, for instance, shows the columns out of proportion and too thin at the necking, and the fluting is indicated by a scrawl of lines down them. That is very much what we might expect to find in a sketch of the Renaissance period; but it would have been better, in a modern sketch, to have drawn the outline of the columns correctly, and to have indicated the fluting at the top and bottom of the shaft, instead of scrawling lines all down it. The fluting of a classic column can never be really drawn in anything that professes only to be a "sketch"—it is too delicate a matter for that. These are, however, a remarkable and most interesting collection of sketches, alone worth visiting the room at the Alpine Club for; and the author has a very true eye for the difficulties of internal perspective in line drawing.

NOTES.

Report of London Water Supply Commissioners.

THE final Report of Lord Llandaff's Commission appointed to inquire into certain phases of the metropolitan water supply question has at length been issued. We purpose dealing with it at some length next week; in

the meantime it may be noted that the Commissioners have entirely thrown over the suggestion of the London County Council to go to Wales for at least an auxiliary supply. In their opinion there is sufficient water in the Thames, the Lea, and from wells sunk in water-bearing strata nearer the Metropolis, if the water in all cases be properly stored; and when efficiently conserved, and filtered with the greatest possible care, the quality of that water is practically unimpeachable. At the same time, in order to more efficiently test the efficacy of the filtration, the establishment of bacteriological stations near the filters is recommended. The quantity, when thus stored, taken at seasonable times, is believed to be sufficient until at least the year 1941, at the present rate of increase of the population of "water London." They are of opinion that the minimum flow of the Thames over Teddington Weir should be fixed at 200,000,000 gallons per day, and that the companies should not be allowed to deplete the river so as to reduce the flow below that amount, except under special safeguards and restrictions. In regard to the proposed Welsh supply, they state that whilst the scheme is undoubtedly attractive, and they would be glad, if it were possible, now to secure a watershed to be used hereafter, if London should require it, the circumstance that no tests, either chemical or bacteriological, were placed before them in regard to the Welsh scheme, so that the Commissioners were unable to judge of the quality of the water, is very significant. They cite Sir A. Binnie's Report to the London County Council, however, from which it appears that the Council's chemist, amongst other things, stated that the waters of the Wye and Towy, though soft and of exceptional purity, dissolve a considerable portion of lead. Professor Dewar warned the Commission that this action on lead would probably make a special treatment of the water necessary before it could be used with safety. They finally recommend that a "Water Board" be constituted to control the whole water supply of the Metropolis, and give their opinion as to how this Board should be constituted.

Housing the London Working Classes.

AN important recommendation of a Committee of the London County Council was passed on Tuesday last by the Council. It sanctioned the expenditure of 45,000*l.* on the building of cottages at Tooting; each cottage to hold two families, and each tenement to be rented at about 7s. 6d. per week. This appears to be a new departure, since it differs from former action of the Council in regard to the housing problem. It is not the erection of a large block of what we may call "flats" in a crowded district, but of small dwellings outside London. We are not saying anything now for or against the project, but we confess that it is so far-reaching that we should have liked to see it discussed in all its aspects. There is a good deal to be said for it; there is also a good deal to be said against it. What enormous pressure, for example, may be placed on members of the Council by the tenants in regard to the rents of such buildings! How far from London is the system to extend? Is the tenant to provide the means of locomotion? What classes are to be accommodated? The housing problem in London is of great importance. There are many signs that it is being dealt with spasmodically, without principle. As we have often said, the subject needs careful investigation by a disinterested body.

Electric Lighting in London.

THE deputation last week to the President of the Board of Trade in regard to the deficiency of the electric light in the parish of Marylebone was interesting and suggestive. Nothing could be more sympathetic than Mr. Ritchie's reception of the deputation, for had not a dinner party at which he was present been interrupted by a failure of the light? But he had no practical consolation to offer. He suggested competition as the best remedy, and lamented that Parliament had not confirmed a provisional order last Session by giving the parish the right to supply electric light. And this suggests the remark, upon which we may have to say more on another occasion, that Parliament is becoming much more subservient than was formerly the case to the capitalist element, showing again that commercial undertakings which minister to the necessities of the people will have to be placed more closely under Government supervision. It is obvious from Mr. Ritchie's reply that if his Department had had the powers he would have taken some drastic measures to compel a proper and unfailing supply of electricity in Marylebone. Some day we shall arrive at a complete municipal supply of light to the whole Metropolis. For the present we must apparently go on with the existing absurd muddle—indifferent gas, insufficient electricity, supplied over the Metropolis without any system.

Electric Supply and the Price of Coal.

THE present high price of coal is stimulating the inventive faculty of engineers to find a substitute for steam coal. At many of the electric power stations in London the greatest difficulty is being experienced in obtaining steam coal, even of inferior quality, and the prices they have to pay for it are almost prohibitive. Under these circumstances it is not surprising that many of them have been experimenting with oil fuels and even with petroleum refuse. The results, so far, do not seem to have been very satisfactory. Mr. Crompton, in his recent paper to the Institution of Electrical Engineers, suggested the use of the inferior coals like the small and earthy bituminous coals of the North, for which there is little demand at present. By the aid of a special combustion chamber of his own invention, and by the use of automatic appliances for distributing the fuel over the bars and preventing it adhering to the bars or the lining of the furnace, the combustion can be accomplished; and the calorific value of the fuel, considering its cost, compares very favourably with that of the best steam coal. Another method of utilising these inferior fuels was suggested three years ago by Mr. Humphrey in his paper on the Mond gas producer. He would turn the fuel into gas in separate gas producers, and the gas would then be burned under boilers or used in gas engines. The figures he obtained in practical tests prove that this is a most economical method of treating fuels, and the maintenance and depreciation are low. It seems to us that either of these methods would be preferable to burning evil-smelling petroleum refuse.

A New "Dangerous Trade."

IT was hardly to be expected that the Royal Committee on Railway Accidents should report unreservedly in favour of compulsory automatic coupling. But the very fact of the appointment of the Committee was a decided step in this direction, and the Report they have just issued is another. Seeing that they arrived at the conclusion that the deaths occurring and the injuries sustained among railway servants "are unnecessarily great in number, and can by means of authoritative action be diminished," it would not have been surprising had their recommendations been even stronger than they are. As it is, they go so far as to indicate the necessity for treating certain railway operations as "dangerous trades." It is certainly difficult to imagine a much more hazardous occupation than that of a night shunter in bad weather, and there is plenty of peril and discomfort attached to it at the best of times. The difficult problem of an automatic coupling suitable to the railway system of this country remains unsolved, but the Committee recommend that the railway companies should, either voluntarily or by obligation placed upon them, make practical experiments, in co-operation with a departmental committee appointed by the Board of Trade. The days of the shunting pole—a comparatively modern appliance—are numbered; it having failed to afford sufficient protection. Instead of this (failing an approved automatic coupler) the Committee advocate the use of a coupling which can be worked by a lever from the truck sides. Altogether, it is a practical, useful Report, unanimously subscribed to by the varying interests represented on the Committee; but it will hardly do to be very sanguine as to its results—at present.

Durability of Paint on the Forth Bridge.

IN a most interesting paper upon "Protective Paints for Iron," read last month before the Newcastle section of the Society of Chemical Industry, Mr. Harry Smith referred to a Report which he had received from Mr. A. Hunter, Resident Engineer of the Forth Bridge, upon the behaviour of the paint upon that structure. All the iron employed in the superstructure of this bridge was scraped clean and given a coat of linseed oil, applied as hot as possible, after leaving the shops or yards. The iron then received a coat of red-lead paint, either before or immediately after its erection. Then a second coat of red lead, followed by two coats of oxide of iron paint, were applied. Mr. Hunter finds the life on the upper portions exposed to the weather to be about three years, but the paint inside the tubes of the bridge is as perfect as when first applied more than twelve years ago. Where signs of rust appear, the iron is scaled, scrubbed with wire brushes, coated with boiled linseed oil, then with a mixture of red-lead paint and iron oxide paint, and finally with brown oxide of iron paint. The lower parts of the bridge near the water have to be cleaned and re-painted once every year, for here the salt spray soon causes rust to appear around the rivet heads and the edges of the plates, and this rust has a tendency to extend in fungus-like patches until the whole plate becomes affected. Mr. Harry Smith expresses some doubt regarding the utility of

the coat of boiled linseed oil without pigment; but, with this exception, his experiments indicate that the treatment adopted for the iron of the Forth Bridge is as effective as any that can be devised.

Restell *v.* Nye.

THE case of Restell *v.* Nye, reported in our legal column, shows among other things, how necessary it is that an architect who takes out quantities for the contractors on his own building should make the matter clear to his client at the outset. In this case the defendant was engaged to carry out a small house at the usual commission of 5 per cent., the client specifically noting that he expected this to cover everything. Then the defendant took out the quantities, charging the builder 2½ per cent. for them, and certifying for that amount over and above the cost of work done. The client at once got an idea that his architect was making private and unlawful gains, or that he (the client) was being made to pay something which he was not called upon to pay. Of course, he was mistaken; the transaction was all right in itself, but the client should, as the judge said, have been openly told of it from the first. There is another point in connexion with the matter, however, which does require explanation. What is the meaning of the ten guineas paid by the contractor "for drawings"? Supplying the necessary drawings to the contractor is work covered by the architect's commission. It is odd that the judge, in his summing up, made no reference to this incident in the case.

The Genius of Rome.

THE *Quarterly Review* contains an interesting article on "The Genius of Rome," dealing partly with the historical and partly with the architectural interest of Rome. The writer supports the conclusion that in regard to devastation of the ancient buildings, the Romans themselves have done more harm to their own city than all the invading hosts put together. The Colosseum was simply quarried in the fifteenth century, and as the reviewer remarks, had not Boniface IV. dedicated the Pantheon to Christian worship it would doubtless have shared in the destruction which overtook so many other temples. In the closing paragraph, in which the writer endeavours to define the cause of the peculiar charm which Rome still exercises over men's minds, he remarks that what is at the bottom of this feeling is "the sense of history, religion, art, romance, all in one—an old world yet visible in its monuments, an escape into dreamland from the sordid present. Above all it is the vague instinctive feeling of innumerable generations summed up in Rome, their ambitions for this world, their aspirations towards the next—and all this extant in streets, palaces, gardens, triumphal arches, mountains of crude brick, tombs, pillars, gateways, walls, at every turning, and in a second city underground — that first overpowers and then by imperceptible degrees fascinates the stranger now, as it did the ambassadors of Pyrrhus some twenty-two centuries ago."

Painting in Enamel.

PROFESSOR HERKOMER has devoted two of his course of annual lectures as Professor of Painting at the Royal Academy to the subject of "Painting in Enamel," the first, on the 18th inst., being devoted to a historical review of the art and a description of the chief processes employed during the Mediæval and Renaissance periods. The second lecture, on Monday last, embodied a practical demonstration by the Professor of his own methods of work, which have a pictorial rather than decorative aim, and avoid both the cloisonné and champlevé treatments. The copper base, its shape, the flux, the groundings on both sides of the plate, the pigments, their grinding and washing, the muffle furnace, screen, and turning oven, and the various tools and implements, in some cases ingeniously designed by the Professor, were exhibited and explained, together with some designs in the various stages towards completion. The difficulties and mechanical accuracy demanded by the art were freely stated, Professor Herkomer significantly remarking that painting in enamel was neither a poor man's art nor a young man's art, but belonged essentially to the middle period of an artist's career, when the limitations of his art had been thoroughly understood. Professor Herkomer is, however, enthusiastic as to its value in representing the finest colour and tones of flesh painting, the *ultima ratio* of artists and media alike.

Mr. Elgood's Exhibition.

WE have had two or three exhibitions of Mr. Elgood's water-colour pictures of garden scenery at the Fine Art Society's Gallery, but none of them at all equal to this. From being a careful but rather timid painter of garden scenery, Mr. Elgood seems in this exhibition to have taken a sudden leap, and arrived all at once at a freedom and breadth of style such as we have not seen in his previous works. He may now claim to be one of the foremost water-colour artists of the day, within his particular walk; and indeed the fine treatment of the sky in some of the pictures belongs to landscape painting in the wider sense, though he still keeps mainly to his garden subjects. The drawings are a beautiful collection, all worth looking at; among those which we especially admired we may mention "Head of the Great Stair, Villa Garzoni" (6), Lake of Varese" (9), "Upper Terrace, Villa Garzoni" (35); "Villa Colonna, Rome" (32) "Spring, Villa Arson, Nice" (43), and "The Dial, Bramham" (47). In the room we were interested to notice a sundial column made from a baluster and a section of the capping of poor old Kew Bridge. It harmonised well with the pictures of the old gardens.

Stevens's Lions.

WE are glad to find that a number of the celebrated little cast lions, designed by Stevens and formerly on the guard-rail outside what we may appropriately call the "peribolus wall" of the British Museum, are now to be made use of as finial ornaments for the barrier round the Wellington monument in St. Paul's. This is one of the best and most suitable uses to which they could be put. Some others of them, we have observed, have already been made use of rather well in certain situations in the interior of the British Museum.

APPOINTMENT.—Mr. C. Hodgson Fowler, F.S.A., of Durham, has been appointed Architect to Lincoln Cathedral in succession to the late Sir Arthur Blomfield.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AN ordinary fortnightly meeting of the Royal Institute of British Architects was held on Monday evening at No. 9, Conduit-street, Regent-street, Mr. J. M. Brydon, Vice-President, occupying the chair in the absence of Mr. William Emerson, the President.

The Late Mr. Ruskin.

The minutes of last meeting having been taken as read,

The Chairman said his first duty, unfortunately, was to announce the decease of an Honorary Fellow of world-wide renown, viz., John Ruskin. He was sure that it must be in the hearts of every one to feel that a great personality had gone out from this land of ours. John Ruskin had been a power in this country for over half a century, and in the particular art of architecture probably no one in our time exercised as much influence as he did. He was responsible, as many would remember, for that wave of Venetian Gothic which passed over our country, notable results of which were found in Oxford and London. He was the man who probably first woke up the English people to the knowledge of what art really means—art in the lives of the people—art in the true sense of theword—as an ennobling factor which raised men and made them think of higher and nobler things. Probably, in this connexion, there was no work which had more influence, and to which one could commend not only students of architecture, but every one who loved art, viz., that magnificent book, "The Seven Lamps of Architecture," and particularly those chapters which deal with Truth and Sacrifice. The idea of truth was held in a very hazy fashion, and probably the idea of sacrifice for art's sake had never occurred to ninety-nine out of every one hundred English people until Ruskin told them what it really meant. It must be to every one a great regret that a man who had exercised so much influence as a thinker and philosopher of art and social politics had passed away from us. Probably we are too near Ruskin to estimate the true value of the part he played in English life and literature and in art criticism—probably he was the greatest art critic we ever had among us. He (the speaker) hoped that the Literature Committee of the Institute might prepare a paper on the influence of Ruskin in relation to architecture in this country—his great influence on architecture. He desired, in conclusion, to move that a vote of condolence to his relatives be passed in their loss.

The motion was then agreed to.

The Artists' War Fund.

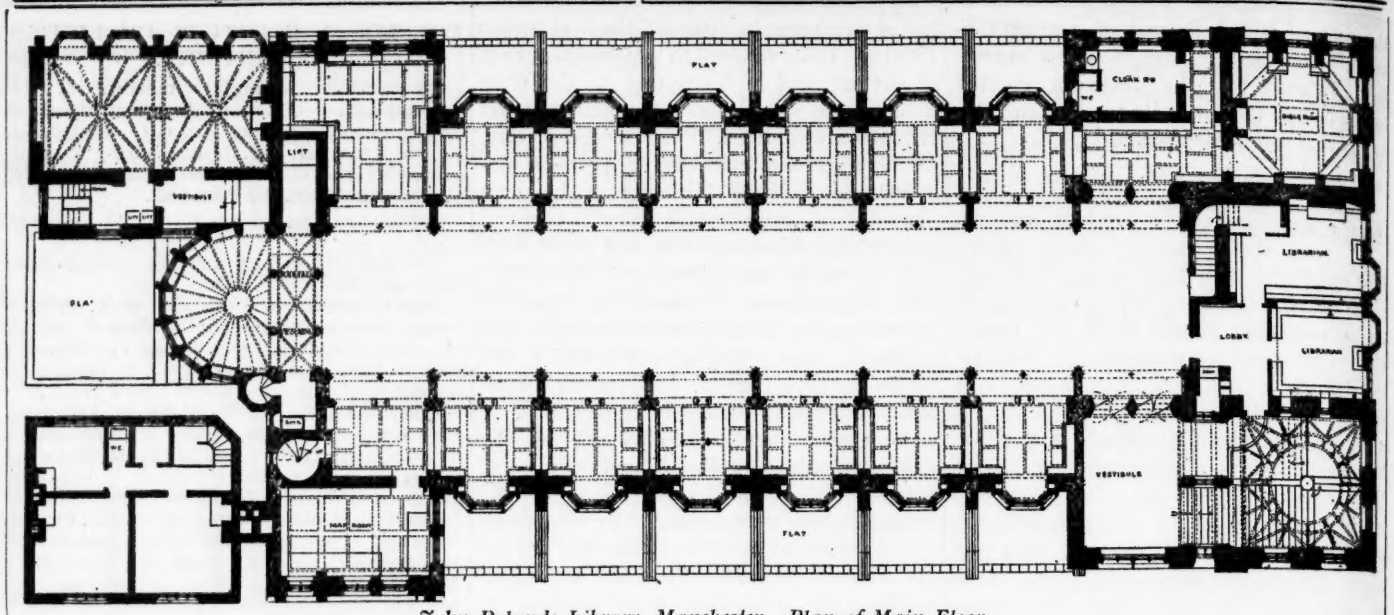
The Chairman said he had been asked to introduce to their notice a circular and letter which had been sent out in reference to the Artists' War Fund for the widows and orphans of men fighting in South Africa. Artists — painters and sculptors — as most of them knew, had started an exhibition of their works at the Guildhall, and all artists were invited to assist in the matter, and to allow their names to be added to the list of those who were ready to help. No words of his were necessary to commend the objects of the Fund to them. Mr. Aston Webb, in a letter on the subject, mentioned that the matter had been very well taken up by painters and sculptors, and would, no donbt, be a success, but he had been told that only four or five architects had subscribed. "We ought not to stand aside on such an occasion," continued Mr. Webb, "but should do what we can to co-operate with our brother artists." He (the chairman) was sure that the matter had only to be mentioned to receive their cordial support. Subscriptions can be sent to Mr. M. H. Spielmann, at the Arts Club.

Prize Winners, 1899-1900.

The Chairman then read the Deed of Award of prizes and studentships for 1899-1900, made by the Council in accordance with by-law 66.

PRIZES AND STUDENTSHIPS, 1900.

THE ROYAL INSTITUTE SILVER MEDALS.—(i.)—*The Essay Medal and Twenty-five Guineas.*—Two essays reviewing the architecture of the Elizabethan period (*c.* 1550—1620) were received for the Silver Medal under the following mottoes:—1. Thelma. 2. "Houses are built by rule." The Council have awarded the Silver Medal and Twenty-five Guineas to the author of the essay bearing the motto "Thelma" *(Mr. Robert W. Carden).*



John Rylands Library, Manchester. Plan of Main Floor.

ii.) *The Measured Drawings Medal and 10l. 10s.*—Five sets of drawings were sent in, of the several buildings enumerated, and under motto, as follows :—1. "Regulus"—Hampton Court Palace. 2. Sir Christopher Wren—Church of St. Magnus the Martyr, Lower Thames-street. 3. Unicorn—St. John's College, Oxford. 4. "Westward Ho" — Gresford Church, Cheshire. 5. White Wheel (device)—Raynham Hall, Norfolk. The Council have awarded the Silver Medal and Ten Guineas to the delineator of St. John's College, Oxford, submitted under the motto of "Unicorn" (*Mr. James B. Fulton*), and a certificate of honourable mention to the delineator of Raynham Hall, Norfolk, under device of a "White Wheel" (*Mr. H. Inigo Triggs*).

THE TRAVELLING STUDENTSHIPS.—(i.) *The Soane Medallion and 100l.*—Eight designs for a School of Fine Art were submitted, under the following mottoes :—1. "Autumn Tint." 2. Furled Flag (device). 3. Hildreth. 4. "Insperata Floruit." 5. S. Barbara. 6. Tendimvs. 7. Pomegranate (device). 8. "Prostasis." The Council have awarded the medallion to the author of the design bearing the motto "S. Barbara" (*Mr. Cyril E. Power*), with the sum of 100*l.* for architectural study abroad during a period of not less than six months, under the specified conditions.

(ii.) *The Owen Jones Studentship and 100l.*—Five applications were received for the Owen Jones Studentship from the following gentlemen :—1. Vivian John Cummings (London). 2. Sydney K. Greenslade (Exeter). 3. Jas. B. Fulton (London). 4. Geo. A. Paterson (Glasgow). 5. J. Hervey Rutherford (London). The Council have awarded the Certificate and (subject to the conditions, among others, that the said candidate devote a tour of not less than six months' duration to the improvement and cultivation of his knowledge of the application of colour as a means of architectural expression, and furnish the Council with an original design in coloured decoration of a prescribed subject) the sum of One Hundred Pounds to Mr. Geo. A. Paterson, and Medals of Merit to Messrs. Jas. B. Fulton and J. Hervey Rutherford.

(iii.) *The Pugin Studentship and 40l.*—Fourteen applications were received for the Pugin Studentship from the following gentlemen :—1. Edwin Forbes (Edinburgh). 2. Shirley Harrison (Leicester). 3. Albert Herbert (Leicester). 4. Wm. Higenbottam (Sheffield). 5. John Jerdan (London). 6. James M'Lachlan (Edinburgh). 7. William D. Mill (Maxwelltown). 8. G. Salway Nicol (Birmingham). 9. Charles B. Pearson (Lancaster). 10. H. Raine (London). 11. J. A. Forbes Smith (Edinburgh). 12. E. W. Turner (Peterborough). 13. R. P. S. Twizell (Newcastle-on-Tyne). 14. J. A. Woore (Derby). The Council have awarded the medal and (subject to the condition, among others, that the said candidate devote a tour of not less than eight weeks' duration in some part of the United Kingdom to the study of mediæval architecture) a sum of forty pounds to Mr. James M'Lachlan, and medals of merit to Messrs. E. W. Turner and J. A. Woore.

(iv.) *The Godwin Medal and 40l.*—Five applications were received for the Godwin Bursary from the following gentlemen :—1. A. E. Bartlett (London). 2. G. B. Carvill (London). 3. Sidney K. Greenslade (Exeter). 4. C. Hay (Maxwelltown). 5. W. A. Scott (London). The Council have awarded the medal and (subject to the condition, among others, that the said candidate spend not less than five weeks in some part of Europe, other than Great Britain and Ireland, or America, for the purpose of studying and reporting on works of modern architecture) the sum of forty pounds to Mr. Sidney K. Greenslade.

(v.) *The Tite Certificate and 30l.*—Thirteen designs for an isolated clock tower and belfry were submitted under the following mottoes :—1. Andromeda. 2. Bow Bells. 3. Edificatvrvs. 4. Erica. 5. "Fafnir." 6. Hollyhock. 7. Italia. 8. Kudos. 9. Meg. 10. "Michele Sanmichele." 11. "Oxon." 12. "Spes." 13. Sphinx. The Council have awarded the Certificate and (subject to the condition, among others, that the said competitor, after an absence of not less than four weeks, shall submit satisfactory evidence of his studies in Italy) a sum of thirty pounds to the author of the design bearing the motto "Edificatvrvs" (*Mr. Percy E. Nobbs*), and a Medal of Merit to the author of the design bearing the motto "Bow Bells" (*Mr. William Arthur Mellon*).

PRIZE FOR DESIGN AND CONSTRUCTION.—*The Grissell Medal and 10l. 10s.*—Four designs for a Spiral Staircase were submitted under the following mottoes :—1. Loire. 2. Spero. 3. Tempore Belli. 4. "Tiny." The Council have awarded the Medal and 10*l.* 10s. to the author of the design bearing the motto "Loire" (*Mr. Charles E. Varndell*).

THE ASHPITEL PRIZE, 1899.—The Council have, on the recommendation of the Board of Examiners (Architecture), awarded the Ashpitel Prize (books value 10*l.* 10s.) to Mr. Raymond Turner Barker (London), he having most highly distinguished himself among the candidates in the Final Examinations, 1899. Mr. Barker was registered *Probationer* in 1890, *Student* in 1898, and passed the Qualifying Examination for Associateship in June, 1899.

THE TRAVELLING STUDENTS' WORK, 1899.—*Pugin Student.*—The Council have approved the work of Mr. J. Hervey Rutherford, who was elected Pugin student for 1899, and who travelled in Devonshire, Oxfordshire, Lincolnshire, and Shropshire.

Tite Prizeman.—The Council have approved the work of Mr. James B. Fulton, who was awarded the Tite Prize in 1899, and who travelled in Italy.

Godwin Bursary.—The Council have approved the Report of Mr. E. W. M. Wonnacott, who was awarded the Godwin Bursary in 1899, and who visited France and Belgium to study the planning and construction of asylums.

Owen Jones Studentship, 1897.—Work is exhibited by Mr. A. E. Henderson, Owen Jones Student of 1897, to whom an extra grant of 50*l.* out of the Owen Jones Fund was awarded in order to enable him to continue his studies in Constantinople.

The John Rylands Memorial Library Manchester.

The Chairman, in calling upon Mr. Basil Champneys, B.A., to read a paper descriptive of this building, of which Mr. Champneys was the architect, said it was one of the most remarkable library buildings constructed in England in recent times, and Mr. Champneys deserved a specially cordial reception in reading his paper before them, inasmuch as he is not a member of the Institute.

Mr. Champneys then read the paper, of which the following is an abstract :—

The circumstances, he said, which led to his being asked to undertake the building of the Rylands Library dictated to a considerable extent its general style and conformation. With a view to the selection of an architect, Mrs. Rylands and her advisers had visited many buildings, among others Mansfield College, Oxford, with which, and especially with the library, she was satisfied as fulfilling generally the intention, and corresponding with the idea, she had formed. Being commissioned to prepare a plan, the author concluded that the type of building must correspond to some extent to that of a college library, and that the style most adapted to the idea, and likely to satisfy his client, was that of Mansfield College. There were, however, special requirements which college libraries do not include. A very large number of books were to be accommodated. There were to be two independent departments—one for reference books, the other for loan—involving two separate entrances. Three large rooms were to be provided, one specially large for the purposes of conference, and two smaller for ordinary committees ; rooms for the librarians, in close communication with the principal library ; refreshment-rooms for staff and visitors, with the necessary offices ; rooms for unpacking, sorting, &c. ; a caretaker's house, detached, but in close connexion with the library ; accommodation for engines and dynamos for electric light ; and basement for hot water, washing, and stowage, and for the preservation of muniments ; a large and important vestibule, and ample and imposing staircase, or staircases. The building to be, as far as possible, fireproof.

The existence of ancient lights on almost all sides of the site dictated to a large extent the general conformation. As the position made it impossible that any but the steepest roof could be rendered visible, and there was no loss of architectural effect involved, timber roofs were omitted almost altogether. The stone vaulting was covered with concrete brought to a level and covered with asphalt.

The author then gave a full description of the building, the disposition of the rooms, and the manner in which he had met the various requirements. With a view to obtaining adequate daylight for the library itself, to avoid unnecessary interference with the rights of adjoining owners, and to secure quiet, the library was placed on the upper floor, some 30 ft. from the pavement level, and set back about 12 ft. from the boundary line at the sides. On the lower floor on either side a cloister or

corridor, giving access to the ground floor rooms, occupies the remaining space, and is kept low, some 9 ft. internal height, so as to allow of ample windows above it for lighting the ground floor rooms, which are about 21 ft. high. The whole of the front of the building is occupied by a spacious vaulted vestibule, the ceiling being carried on shafts.

The library consists of a central corridor 20 ft. wide and 125 ft. long, terminating in an apse, together giving an extreme length of 148 ft. The central hall is 44 ft. from the floor to the vaulted ceiling, and is throughout groined in stone. It is divided into eight bays, one of which is on one side occupied by the main entrance, while the rest open into reading recesses. On this floor there are fifteen recesses occupied by book-cases. Two staircases, one at either end of the main library, lead from the lower to the upper floor. The reading spaces on both floors have bay windows; on the lower floor their ceilings are of oak ribs and modelled plaster; on the upper floor they are vaulted.

Adjoining the caretaker's house, which is separated from, but in immediate connexion with, the main building, is a spiral staircase which leads to all the floors of the main building, and under the house are the boilers and furnace for the hot-water warming. The material used is mainly stone from quarries near Penrith. That used for the interior throughout is shawk—a stone that varies in colour from grey to a delicate tone of red. Much care has been used in the distribution of the tints, which are for the most part banded in an irregular combination. Many of the stones show both colours in a mottled form, and serve to bring the tints together. As towards the completion of the building it proved impossible to obtain a sufficient quantity of mottled stone, the main vaulting of the library had to be built in a way that gives a more banded effect than was originally contemplated.

Appropriate carvings decorate the several parts of the exterior of the building. Facing the main doorway is a symbolical group, carved in the stone employed throughout the interior of the building. The sculptor was Mr. John Cassidy, of Manchester.

A series of portrait statues by Mr. Robert Bridgman, of Lichfield, has been designed and arranged so as to represent many of the most eminent men of different countries and ages in the several departments of Literature, Science, and Art. These are placed for the most part in pairs, marking both correspondences and contrasts in character and achievement. The statues, twenty in number, are ranged in niches along the gallery front. They are supplemented by a series of pictured effigies in the two stained-glass windows, designed and wrought by Mr. C. E. Kempe, each window containing twenty figures, taken, wherever possible, from contemporary portraits. The great north window is symbolical of Theology. The south window represents Literature and Art. The main design of the library, in its bearing upon Philosophy, Ethics, and Intellectual Culture is further illustrated by a series of Latin mottoes, carved on ribbon scrolls between the windows of the clearstory, a printer's device being below each motto. The fronts of the book-cases consist of very large sheets of plate glass (9 ft. 9 in. by 2 ft.) contained in gunmetal frames. The exclusion of dust is provided for by rolls of velvet made elastic by the insertion of wool, which, when the doors are closed, are pressed between the door and a fillet.

The Chairman said that they had all listened with much interest to a description of a unique building—one of the latest monumental libraries erected in England. The building was eminently an English building, founded on English types, which was a great point. At a previous discussion on libraries* in that room it had been stated that the John Rylands library was ventilated without opening the windows, and he would like to hear from Mr. Champneys how that was effected.

Mr. Aston Webb, in proposing a very hearty vote of thanks to Mr. Champneys, said that the paper was just the sort of essay the Institute liked to have—a paper about a recently-erected building, by its architect, dealing with a subject with which they all more or less came into contact in the exercise of their calling. Mr. Champneys had also shown plans and sections and details of the building, so that even those who had not seen the actual work were able, to some extent, to realise its magnificence. Mrs. Rylands had indeed been fortunate in having Mr. Champneys for her architect, and he thought Mr. Champneys must consider himself, to some extent, fortunate in having a client who was willing and able to give him so free a hand in constructing the Library, and perhaps still more so in allowing him nine years to carry it out. Mr. Champneys had evidently availed himself to the full of that advantage of time—an advantage which many of them did not get to quite the same extent. As to the general arrangements of the building, he took it that there were two ways of treating the interior of a library. One was to make the books the great feature, and perhaps, in many cases, to line the walls from floor to ceiling with books, producing, as one entered, a hush that nothing else could give. They all knew of libraries, new and old, in which the books formed the great influence which pervaded the place as one entered; and a grand effect that was. Then there was the other plan, which was also exemplified in some of the finest of old examples, as well as in the John Rylands Library, of impressing the reader or visitor with the liberal proportions, of the dignity and richness, of the building, apart, to some extent, from the books themselves. In an interesting paper read before the Institute by Mr. Jackson some time ago on "Old Libraries,"* the lecturer gave them a long series of photographic views of libraries from Oxford and Cambridge, in which both treatments were adopted; and all of them must have felt, in looking at those views, that each treatment had its special advantage. He supposed that for the size of the building the collection of books in the case of the John Rylands Library could not have been very large, and that therefore it was not necessary to provide that the whole space should be occupied by books. Of course, the Althorp Library contained some of the choicest gems, both of literature and of books as books themselves, that the world contained, and therefore it seemed fit and proper that those gems should be housed in a casket in which every care had been given, and no possible expense appeared to have been spared in the matter. Mr. Champneys had apparently been free from the restrictions that surrounded most of them when they had to plan a library at the present day. The supervision of readers was, he presumed, amply provided for by attendants, who were able to see into the recesses in which such invaluable books were made use of. In many libraries those recesses—in ordinary public libraries—would be difficult of supervision, and he would be interested to know what sort of rules there were for admission to the library at Manchester. He supposed that admission was only granted to people who knew how to treat valuable books with care. As to the book-cases, he thought they would all be interested if Mr. Champneys could tell them a little more about them. He could not be sure from Mr. Champneys' remarks whether the whole of the book-cases were in metal or only the doors. In America they made use of the metal book-case to an extraordinary extent, and he had seen a room in this country fitted up for books with fittings from America—a most extraordinary and perfect piece of work. The fittings were of enamelled iron, which did not sound very promising; but, apart from the design, the fittings were excellent—the shelves moved easily, and the doors opened and shut, while there was no possible shrinkage, and no admission of dust when once the cases were fixed. One regretted having to put books behind glass, but in a public library in a smoky atmosphere he supposed that was an absolute necessity.

Mr. J. H. Quinn, Librarian of the Chelsea Library, said he and other librarians who visited the building at the time of its opening thought it worthy of the great treasures which it contains. The building was in no sense a public library compared with those which came under the penny rate, and apparently there had been no limit as to cost in erecting the building or in furnishing it with books. He believed the original idea of the promoters of the memorial was to form an immense theological nonconformists' library, but later, when the Althorp library was purchased, a much larger scheme was prepared. He hoped that Mr. Champneys had been successful in the fire precautions he had taken in the erection of the building, and he hoped that it had been possible to exclude the Manchester atmosphere from the books. Apart from its memorial purposes, he was afraid that such a library was rather a white elephant in Manchester—though Manchester, of course, was a literary centre—for there were not many who would appreciate it at its proper value. As to the class of readers who would visit the library, they would consist mostly of clergymen and ministers.

Mr. Leonard Stokes, in seconding the vote of thanks, said, looking at the building from the architect's point of view, the architecture seemed first-rate. Where books were of great value, as in this case, they should be housed in an equally valuable building. There was a practical detail which he would like to hear more about—viz., as to the construction of the book-cases. However much cracks were stuffed up with velvet or wool, the differences from day to day of the atmospheric pressure would cause the atmosphere eventually to penetrate. He did not see how dust could be kept out of book-cases where there was this difference in atmospheric pressure—especially Manchester dust and dirt. Bad atmosphere seemed to destroy books very quickly. What steps, therefore, had Mr. Champneys taken to preserve the valuable books in the new building?

Mr. Beresford Pite said he desired to support the vote of thanks to Mr. Champneys, the more so as it was only recently that Mr. Champneys favoured the students of the Architectural Association one evening with an interesting account of some of the methods he had adopted in this most remarkable building, as to cleansing the air, and as to some of the matters referred to by Mr. Stokes. He (the speaker) ventured to think that however great the interest of the building might be from the library or librarian's point of view, its chief interest to architects was its unique character as a work of architecture. One could see underneath the surface that Mr. Champneys had an ideal—like others, of course—but Mr. Champneys had had an opportunity of carrying out his ideal on a scale which few of them would, he was afraid, ever have a chance of equalling. The erection of the library afforded a unique opportunity to Mr. Champneys and he had given a most interesting exposition of his idea of a fine monumental and memorial building. When a man was put to the test of doing his utmost, he did his utmost by doing his strongest, and none of them had any doubt as to what Mr. Champneys' strongest was. He had produced a building which removed the Law Courts from being the last Gothic building of any importance, and he had reverted to the style of Pugin and of Sir Charles Barry in the Houses of Parliament; and from the point of view of his Gothic being manifestly and distinctly English, he had moved backwards, though his building could not be described as such a modern work as that of the Houses of Parliament. Mr. Champneys had gone a step further in the thorough grasp of what was mediæval in spirit and character, and he had not been hampered by the ordinary restrictions of a competition, for he was practically free in the selection of style, in that the style was selected from a highly successful building he had already built. It was to be hoped that the library, which was artistically and structurally so successful, would prove successful from the librarian's point of view. It was seldom that one saw a building which was so fine an example of a scientific study of artistic construction. About a year ago, before the building was finished, he had had an opportunity of going over it, and he was very much impressed by the style and construction of the vaultings, and the consistent way in which the staircase and passages and the great hall had been groined. We seemed to have gone back to the days when the mediæval architects revelled in the exercise of that extraordinary imaginative faculty in Perpendicular vaulting. The idea of constructing a beautiful casket, as Mr. Webb well put it, for such a valuable collection of books was one which would commend itself to the artist and the idealist rather than to the practical library builder; but a building should be worthy of its contents, as the contents worthy of the building. In this case, the contents justified an extravagant method of architectural adornment. If there was room for criticism, it would be as to the colour quality of the building. At present it might be beautiful under the Manchester

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* "Public Libraries," by Mr. J. M. Brydon and Mr. F. J. Burgoyne. See our issue for February 25, 1899.

* See our issue for May 21, 1898.

atmosphere, though when he saw the building the colour effect was sombre. But what would the grey and red tints which Mr. Champneys had described become in a few years? It was a little melancholy to contemplate. A building like this would stand for centuries, but he was very much afraid that in a generation or so the colour effect would be destroyed by the fog of Manchester, which would reduce the greys and reds to browns and blacks. Many difficulties in the design had been triumphantly overcome. The building was exceedingly dignified in appearance, and yet it was in a comparatively narrow street for a building of such size; and it was not without impressiveness, while its main idea of its foundation was well expressed. It was a memorial building to a great benefactor, carried out by an architect with a great ideal.

Mr. H. H. Statham, in supporting the vote of thanks, said it was rather curious to observe that the design was practically a modern application of the three-aisle plan, with internal chapels and buttresses. It was interesting to observe to how many purposes that plan, which was supposed to be essentially a church plan, would lend itself. They must congratulate Mr. Champneys as to the manner in which he had got over the drawback of the timber roof over the vaulting. He had not understood, until he had heard the paper, what was the meaning of the two octagonal turrets in front of the building, much lower than the rest of it, which gave a distinct character to the work. They now found that the towers were pushed back in consequence of rights of light opposite, and the space in front was made use of in the manner shown in elevation. That was a very happy illustration of getting architectural character out of mere practical necessity. In the side elevation of the building, in the centre of each of the lower windows which gave light to the committee rooms, was a sort of block, or a clear white space. He was rather interested to know what that was for. He supposed it might be intended for sculpture or some symbolical device.

Mr. E. W. Hudson asked of what material the floor of the building consisted—whether of wood block or tile, or of ordinary material. Mr. Champneys had told them that he was not responsible for the chairs in the building, and it would be interesting to know if the fittings had been designed by him. He understood that the warming of the building was by hot water; that was a much more satisfactory system than hot air, which one was accustomed to in the larger libraries.

The Chairman, in putting the vote of thanks to the meeting, said it was not every day that an opportunity was afforded an architect of erecting such a monument, and it was a matter for congratulation that the erection of the building was entrusted to such good hands. He hoped that the library would be open to members of the profession who might desire to see it, for it was a building not to be met with every day. The plan was familiar to them in one or two respects. As Mr. Statham had said, it suggested a church plan and it appeared to be founded on the type of well-known library plans such as that at Florence and that at Trinity College, Cambridge, with this difference, viz., that instead of the bays being compartments formed by the bookcases in which readers sat, in the John Rylands library they were formed into architectural features and converted more or less into nave and aisles, giving an architectural significance which, in the examples he had mentioned, was more or less wanting. In the John Rylands library the bays were treated architecturally by converting them into constructive bays which formed the chapels, so to speak, in which the reader sat. Each bay was divided into two by a shaft which carried a statue—a very happy idea, for it shut in the reader to some extent, and enabled him to be in comparative quiet. In each of the bays was a little bay window—a feature which had been done to death in recent years, but which, if it were appropriate anywhere, was appropriate in the reading-room of a library, where it suggested cosiness and quiet. One of the most "readable" rooms that he knew of was the library at the Reform Club in Pall Mall. In that room one felt the sense of rest, which was an essential feature of every room in which one wanted to read. The building in Manchester was a great setting to a unique gem. The Althorp Library contained some of the greatest book treasures in the world, and had cost more than a quarter of a million, and the building itself had probably cost nearly as much. It was a matter for congratulation that the architect had not been hurried in his work, for architects nowadays were too much hurried; the time taken in the erection of the building had given the architect an opportunity of considering its requirements. A point which he had noticed with satisfaction in the plans of the building, and which showed a thorough grasp on the part of the architect of the necessities of the case, was that the reading-room was placed well above the street. Deansgate was a busy street, and in putting a reading-room in such a street some steps must be taken to make it quiet and, at the same time, easily accessible. In this library the ideas of both rest and seclusion had been met. He had been struck by the monumental character of the building: it was vaulted throughout, and there was no trickery in construction. It was very fortunate that Mr. Champneys had been able to enlist the services of the painter and sculptor in the work, and it was a matter for congratulation that men like Mr. Kempe and Mr. Cassidy had been engaged in the work—working in relation to the architecture. It was a very happy matter when there was a union of the arts in the carrying out of a monumental building such as the John Rylands Library.

The vote of thanks having been heartily agreed to,

Mr. Basil Champneys, in reply, said that at the time when he was applied to in reference to the building, he had been thinking a great deal about a college library. When this commission came, he had got a sort of idea in his head, and was able to make a plan with great rapidity; in about a day and a half he had put all the general plan and grouping on paper, and within a week had sent Mrs. Rylands a plan which in essential particulars had not been departed from. During the eight or nine years he had been at work on the building he had given nearly half his time to it; but the alterations from the plan as first draughted were exceedingly slight. With regard to the question about ventilation he had always intended that the air should be admitted to the building over the hot-water pipes, so that it should come in at a fair temperature, and from the first he had advocated filtering the air. That suggestion was not carried out in the first instance, and it was considered that there would be no possibility of excluding the foul air, and that it was unnecessary; he got the batteries, however, and other accessories, and waited for a better opportunity. The opportunity came when the Althorp books were purchased. He had no idea, in the first instance, what the purposes of the library were; he was only told enough to influence the plan; but when the Althorp books were purchased he strongly advocated the filtering of the air before it was allowed to pass into the building. He carried his point so far that where the air entered the building it was passed over screens loaded with cotton fibre which caught a very great quantity of dust. He advocated water sprays in addition, but these were not adopted. He insisted, however, upon such arrangements being made that water sprays could be added at any future time if they were required. He gathered from the first that the building was to be of a more or less monumental character, and that everything must be of the best, but that the building was to accommodate a monumental library was quite unknown to him. He need not say that he was extremely glad when he found that the collection of books was to be at least worthy of the building, however good one could make it. A good many papers spoke of the building as having something of a castellated appearance, as though it were intended for the protection of treasures. That he certainly did not contemplate; he rather had an idea that a more or less severe library would be better suited to a place like Manchester than one more ornate. When a quarter of a million pounds' worth of books came to be housed within the building, he thought that it was a little fortunate that he had given it a protective sort of appearance; and when something was said about battlements he felt that that feature came in, through luck, more or less appropriately. As to the length of time before the work was completed, that was partly due to the fact that by his client's wish the fittings were not decided on until the fabric was practically completed. The fittings, bookcases, &c., were an elaborate and very expensive business, requiring a great deal of study—involving a matter of some two or three years. One considerable alteration he had been required to make. His idea had been to make the reading recesses even more private than they were at present. Having in mind certain old recesses in the Bodleian, it was his intention to divide off the recesses from the main hall by open stone screens. Mrs. Rylands, however, probably with the Althorp collection in mind, felt that the books should be a little more in evidence than they would have been by that means; and the screens were struck out—an alteration involving some difficulty. As regarded supervision, there were something like 30,000 books, worth a quarter of a million of money, and these of course could only be handled under supervision. Moreover, there would be very few that would be handled at any one time. It was rather a collection for bibliophiles—not for general readers. The books were very rare specimens of printed books, of which many were and must remain uncut—this often adding immensely to their value. People interested in such works might come from all parts—Europe and America and the whole world—and even then they would not muster a very large number. He doubted whether there would ever be half a dozen people at one time in the library for the purpose of seeing the books, and the librarian and under officials would keep them absolutely under their own eye. When he planned the library he had not contemplated the Althorp books, and if the supervision was not adequate, or if the plan of the building did not render it adequate, the only way to make it so was by having extra attendants. The material of the bookcases generally, all except the doors, was oak. They tried some of the American plans—and he did not know that they were practically unsatisfactory—but they did not like the idea, and there was so much oak in the building that they preferred that material for the cases. He had always been a hater of large sheets of plate glass in any form whatever; but there were great difficulties in making the doors of bookcases in any other way. It made a heavier door for one thing, and it was difficult to put them up in such a way that the bars did not go wrong with the shelves, and if the shelves were fixed (as in a library of that kind they scarcely could be) one got a double row of horizontal lines. On the whole, he accepted as a practical necessity large sheets of plate glass, and, as a matter of appearance, he had seen no reason to regret it; in fact, it had been an opportunity of overcoming a prejudice, though his prejudice as to windows in houses remained quite untouched. In the first instance he had no expectation that the books would be specially protected at all. Those he first sketched were perfectly open cases in the old college system, where the books were easily accessible, that anybody might take out and replace. That system was applied only to the portion of the library used for reference books, which were unprotected. As to the atmosphere, he had done all that he was permitted to do by way of purifying the air, and he thought the system would answer, as far as he had been able to judge so far. One great thing they had done for the books was to exclude gas altogether. Gas was the most fatal thing—it took all the moisture out of the air and forced the backs of the books off in an extraordinary way. From the first they contemplated the electric light. With regard to the colouring material, he had deliberately adopted a reddish colour. He had always noticed in London (which was not quite so bad as Manchester) that if they started with a red brick they always got, even when very much obscured by smoke, a little touch of warmth which was rather pleasing than otherwise. In Manchester he made a considerable study of the stones, and it seemed to him that white or grey stones simply became a dirty black, whereas red stone—such as the Runcorn stone used in Manchester, which, however, did not last—looked better than the stone which started without any colour, although many years had passed over it. As regards the site, that was bought before he had anything to do with it. Many people in Manchester considered the site very bad for the purpose. But he had always said he did not so much mind about the site. On the Continent one frequently came across, in an exceedingly narrow street, some old building in very rapid perspective, and it often was much more pleasing than if the building

were seen standing out in some *place*. He did not mind, therefore, about the site, although one might perhaps get more honour and glory from a building put up in an open space. With regard to Mr. Statham's question, as to some blocks in the centre of the windows which looked like key-stones—they were, in a sense, key-stones; they were projecting corbels built into the crown of the arches, and helping in a measure to carry the corbels at the bottom of the bay windows. They were not without precedent; one or two examples would be found in old manor houses, some of which were illustrated in Pugin. He had previously used them in Mansfield College, where they had devices, and there was an inscription running along the series of them. At the Rylands Library they were not in any prominent position, and he left them plain. As to the reading-desks, about which a question had been asked, he had not carried out the fittings of those recesses further than to put the book-cases and panellings in. The reading-desks were dealt with by his client. The material of the floor of the library and of all the other rooms was oak; and in the passages the same sort of stone was used as in the exterior of the building, only a harder stone than most of it, and slightly varied in tint. He had not used black and white marble, or anything of that kind, because he wanted to keep the internal colouring uniform. As regarded the future of the colour of the building, he was rather hopeful. In the first place, the filtration of the air must do some good, though not to the extent he hoped. Even where there was no such filtration, as in the interior of Manchester Cathedral, which was of a stone not dissimilar in colour, the older parts had kept their colour very fairly. He hoped in this case that, with filtration of the air, the stone would keep its colour permanently.

The Chairman announced that the drawings submitted for the Institute prizes and studentships, together with the works of travelling students and others, would continue to be on view at the Alpine Club until Saturday, the 27th inst., when the exhibition will close.

The next meeting will be on the 5th prox., when the President will deliver an address to students and Mr. G. F. Bodley A.R.A., will read a critical review of the drawings submitted by the students.

The meeting then terminated.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

THE sixth meeting of the present session of the Architectural Association Discussion Section was held at 56, Great Marlborough-street, W., on the 19th inst., Mr. W. B. Hopkins in the chair. Mr. C. B. Bone read a paper on "Granite as a Building Material in the Channel Islands." Mr. Bone disclaimed any intention of dealing with the geology of granite from a strictly scientific point of view, but pointed out the chief points of its history and composition, and illustrated his remarks with specimens he had brought with him from the Islands. He then made some practical suggestions on the use of granite as a building stone, showing that, although one is accustomed to consider granite almost imperishable, the question of its weathering qualities required consideration, owing to the decomposition of the felspar. This in many of the old buildings, had caused the loss of all sharpness, and in many cases it was possible to rub off particles of the stone with the hand. To avoid this difficulty as far as possible, it was advisable to employ a geologist to make the selection, or use stone from a quarry proved to be of good quality. As to how granite should be treated, Mr. Bone considered that its treatment in the granite districts should be studied, and produced photographs showing the work at St. Levan Church and other places, where the stone was used in large rough blocks in a manner very different from Bath or Portland stone; and he especially condemned the practice of dressing the stone too fine. He advocated avoiding elaborate mouldings, thin mullions, and tracery, and before all things designing the building to suit the material. In Jersey the church roofs were practically one solid mass of concrete composed of large stones, shaped on the under side to form a vaulted ceiling, and sloped on the upper surface to receive the tiles, which were bedded directly on to the concrete.

Mr. J. Mowlem Burt (Messrs. Mowlem & Co.), being unable to attend the meeting, sent an interesting letter on the subject from a practical point of view, which was read by the secretary, who also read letters from Messrs. E. W. Mountford and E. C. Pinks, giving many valuable notes of their recent inquiries in Guernsey as to the local uses, qualities, and cost of granite work.

The discussion, which was of an interesting and general character, was opened by Mr. H. A. Satchell, and continued by Messrs. J. H. Pearson, Tayler, G. H. Smith, Max Clarke, Strange, and the Chairman.

THE ARCHITECTURAL ASSOCIATION: PARIS EXHIBITION PRIZE.

MR. ARTHER CATES has offered a prize, to be given by the Architectural Association, for a descriptive and illustrative account of the Paris Exhibition of this year. It is, in fact, a kind of Paris Exhibition travelling studentship, the holder of which is to be selected in advance under the following conditions:—

"Candidates to be members of the Architectural Association, without limit as to age.

To have passed the Royal Institute of British Architects' Final Examination, or

To have passed the Intermediate Examination, and also to submit drawings equivalent to the testimonies of study required to be sent in for the Final Examination.

To also submit practical working drawings and some brief descriptive reports of a technical character, satisfactory evidence of ability in architectural and constructive design, with good accurate draughtsmanship being essential.

Application, with drawings, &c., to be sent in to the Hon. Secs. at 56, Great Marlborough-street, not later than April 30, 1900.

The examination to determine the award of the prize to be partly written and partly oral, and conducted by gentlemen appointed by the Committee. The subjects will be:—

a. French, as written and spoken.
b. Technical French, as used in relation to architecture and building.
c. The metrical system and its application to architecture, building plans, surveys, and accounts.
d. General knowledge of architecture (if thought necessary by the examiners).

The examiners will have full power to award the prize or not as they may think fit.

The successful candidate will be required to spend not less than four weeks in Paris to study, examine, and report on the architecture and buildings of the Exhibition; and must, on or before December 22, 1900, deliver to the Hon. Secs. an illustrated report descriptive of the same.

The successful student will receive 20*l.*, to be paid in two instalments, the first on his leaving England and the second on his submitting the illustrated report to the satisfaction of the Committee of the Architectural Association. He may be required to read a paper before the Architectural Association on the subject of his study.

The illustrated report, or a complete copy, to be presented to the Architectural Association, who shall have the right to publish the whole or any part in *Architectural Association Notes*."

LEGAL TOPICS OF INTEREST TO ARCHITECTS AND SURVEYORS.*

THERE is a proverb which is somewhat uncomplimentary to the man who acts as his own lawyer. I venture to think, however, that a knowledge of the law may be of considerable use to a layman in preventing him, when he is on the edge of a legal precipice, from acting as his own lawyer, and in helping him to act wisely when his solicitor has left his office and gone home. For solicitors sometimes dine, and have a home circle which cherishes them; nor can they, like doctors, be rung up at any hour of the night.

The man who would conceive and plan the buildings which act as the temples of our commerce or the nucleus of our home life, or form the outward expression of our religious devotion, meets with many difficulties. There are the brute forces of nature, the wind which makes his Tudor chimneys smoke or, still worse, blows them down, or the frost which lays its injunction on him during the winter. Worse still, there are jealous neighbours who allege that he is encroaching on their fields, or wrongfully leaning against their buildings, or darkening their ancient lights. Then he may have to keep a wary eye on the builder, to see that the building contract is duly carried out.

Again, there are the Local Authorities, armed by Parliament with extensive powers in the hope that they will use them wisely. Trustees of the public eye, whose delicate artistic sense requires a symmetrical street, these authorities, like some drill sergeant, say to the houses, "Fall in" (a command to not to be taken too literally). Trustees of the public lungs and legs, they preserve our open spaces from encroachments and our streets and highways from obstructions. And not only this, but with tender solicitude the Legislature has commissioned the Local Authorities to watch over the health and safety of the inmates of the buildings which you intend to erect or to rebuild. It is with these powers of Local Authorities that I propose to deal to-night. The law I wish to lay down must, however, be taken with this qualification—that it does not necessarily apply to the metropolis or to Scotland.

The statutes with which we have to do speak of "buildings" and of "houses," and it would be well at the outset to ascertain what these words mean. In construing a word you must take it in its ordinary and popular sense, unless you gather, from a perusal of the whole Act, that it is to be otherwise understood. Further, so far as possible without straining the language of the Act, you must carry out its intention. This intention must be gathered from the words of the statute itself, the whole of it being duly considered.

First, as to "building."

This word occurs in two kinds of provisions, and its meaning varies according to which of these two kinds of provisions contains it. It occurs in provisions for the benefit of the public generally, and in provisions for the health and safety of inmates of buildings. I must emphasise the chameleon-like nature of this, and, indeed, of all words. It is of little use to search through cases as to inspecting dilapidations or as to voters' qualifications in order to ascertain the meaning of this word.

In provisions for the benefit of the public the word "building" must be taken to include any structure, whatever its material, if it be only large enough and be intended to be permanent. Thus, a wall 15 ft. high is a "building" in breach of an obligation not to build within so many feet of the footpath, and a huge wooden trellis is a breach of a covenant against putting a "building" in a yard. If the size, however, is not great the erection will not always be a "building"—*e.g.*, a small conservatory 4½ ft. by 2½ ft. was permitted to project in front of the line of buildings, and in another case a small railing; and it was held that a wall 8 ft. high was not a breach of covenant against building within so many feet of the footpath, as it was about the height that would be necessary to secure privacy against pedestrians. I have quoted several cases of covenants, but the principle is the same. As to the necessity for permanence, the case as to the huge wooden trellis above alluded to may with advantage be examined. Common sense tells us that, in order to carry out the purposes of these restrictive covenants or of statutes forbidding "buildings," in certain places, a mere wall must be included, for it would be almost as objectionable, if it broke the vista of our streets or encroached on our public parks or on our highways, as would any other building.

Very different, however, is the meaning of the word "building" when it is found in provisions for the health and safety of inmates. A "building" in these provisions requires size and permanence, as it did in the former class of provisions, and thus your builder's shanty, intended to be removed when the new terrace you are putting up is completed, does not come under the term "building." One other ingredient, however, is requisite, and that is capacity. To use more homely language, it must be something a man could get into and move about in, and must have a roof to shelter him. But if these ingredients are present, it matters not that it is uninhabitable. It may have no fireplace, no chimneys, and no foundation. It may be of any material. It may have wheels, if it is used for the purposes that buildings are used for. Thus, night houses for cattle, and coach-houses, have been held to be "buildings" for the purpose of these provisions, but not a boiler standing on a base of bricks 4 ft. high. A judge has decided that a dog-kennel, a bird-cage, and a wig-box do not come under the category of "buildings" in this connexion. You may therefore, if you so wish, design these without fear of the Public Health Acts.

Next, as to the meaning of the word "house."

This word does not occur in provisions for

* A Paper read before a Sectional meeting of the Northern Architectural Association at Newcastle, on the 17th inst., by Mr. Algernon Barker, barrister-at-law.

the benefit of the public, but it is frequently found in the other class, provisions for the health and safety of inmates. It requires the three ingredients of size, permanence, and capacity mentioned above, but adds to them one other—that is, habitability, though this ingredient may be absent if the word comes under the interpretation clause mentioned below. Thus it includes an unconsecrated chapel which was inhabited by a caretaker, and the whole of which could have been inhabited without any structural alterations. Conversely, nothing that is uninhabitable, unless it comes under the interpretation clause, can be a "house." This lack of habitability may arise from two causes: from structural defect in the absence of such things as a fireplace, windows, or doors; or from the legal bar to using the structure for purposes of habitation, which results from consecration, as in the case of a church, which has been held not to be a "house" in this connexion. Thus, we must exclude such opposites as a cowhouse and a church. We must, however, in accordance with the interpretation clause of the Public Health Act, as modified by later Acts, include "schools, factories, and buildings where persons are employed." Thus, taking what I may call the common law and the statutory definitions together, you might, I think, include schools, factories, offices, shops, warehouses, theatres, and all premises where a caretaker sleeps.

When the word "dwelling-house" is found in the Acts we deal with, it seems to mean a house of which the main purpose is residence. The mere fact that a caretaker resides on premises such as a chapel or warehouse would not, of itself, be sufficient to make them a "dwelling-house."

Before leaving this part of my subject, I may mention that the interpretation of the meaning of words contained in a statute is a matter of law, but the question as to whether any particular subject matter with which you may have to deal comes within the definition of any word so interpreted, is a question of fact.

Your first question in considering the rules which I desire to lay down will be "What am I building?" Some of the provisions that we shall consider apply, as we have seen, to "buildings" in the most comprehensive sense, others to buildings in the narrower sense (excluding, as I may remind you, anything without a roof), others apply to "houses" and all the other premises by judicial decision or by interpretation clause comprised in that word. Others, again, apply to particular kinds of premises, to dwelling-houses, to common lodgings, to cellar dwellings, to factories and workshops, to bakehouses, to dairies or to schools.

Another question in considering the rules hereafter mentioned will be, "Where am I building? Is it in the crowded town or the divine country?" Or, to be more practical, is it within the jurisdiction of an Urban or a Rural district council? Much will depend on the answer to this question, so widely do the powers of these councils differ. The difference between the Town or a City Council and an Urban district council is not great. The dignity and, shall I say, the poetry of the former may be wanting to the latter, but, so far as the provisions which affect the man who builds are concerned, there is little or no real difference. Very different, however, are the powers of an Urban District Council from those of its humbler rural brother.

An Urban District Council can by the Public Health Act set back a building whose front you are completely restoring, and can under another statute punish you for building beyond the house on either side of you. It can prevent you from building upon its sewers or under its carriage-ways. It can forbid you to build a house without a drain. Then again, by adopting the Public Health Act Amendment Act, it can gain further exclusive powers; it can forbid a room over a cesspool, ashpit, or privy to be inhabited; it can permit you to substitute an ashtub for the ashpit; it can see to the substantial construction of and sufficient ingress into and egress from places of public resort, and also to the safety of grand stands and the like. Again, an Urban Council has power to make the by-laws authorised by Section 157 of the Public Health Act of 1875. And if the Public Health Act Amendment Act is adopted, it can make by-laws as to paving of yards and open spaces round dwelling-houses, and as to providing of secondary means of access to ashpits and the like for the purpose of removing house refuse.

The country cousin has none of these powers unless it obtains them from the Local Government Board. One luxury, however, the Rural District Council has all to itself. By the Public Health (Water) Act, Section 6, it can punish the man who builds a "dwelling-house" without first obtaining a certificate that there is a water supply at a reasonable distance from it. Here again, however, the Local Government Board may step in and give this power to an Urban Authority at their request.

A second time again it will be well to ask ourselves "Where and under what statutes am I building? Has the Council adopted the Public Health Act Amendment Act? Is there any local Act or by-laws that may have a word to say to me? Who am I building for? Is there a special Act or special powers or restrictions in any Act which may enlarge or curtail my liberty?"

There are the public general statutes, such as the Public Health Act, 1875; the Public Health (Water) Act, 1878; the Public Health (Buildings in Streets) Act, 1888; the Factory Acts; the Chimney Sweepers' Act of 1840, and the numerous Acts as to town gardens, commons, and open spaces. Then we may have to deal with an adoptive Act, the Public Health Act Amendment Act, which, until it is adopted by a district, has no more force of law in any district than some incipient Bill in Parliament. With the formalities precedent to adoption I will not trouble you. The Urban Council cannot pick and choose which of the sanitary provisions in Part III. of the Amendment Act they will adopt. They must take all or none. Rural Councils stand in the same position as to those provisions which they can adopt without leave of the Local Government Board; but where they need this leave they do gain a power of choice, as the Local Government Board only gives them such powers as they ask for.

Then there may be the local Acts, and the contents of these are so various that I cannot deal with them at present. They must, however, be carefully read, as they may, with regard to the place in which you are building, utterly upset any of the law laid down in this paper. I cannot too strongly emphasise this fact. In these local Acts are usually incorporated the whole or parts of the Towns Improvements Clauses Act. Then again there may be by-laws, which we shall consider later on. Or, again, the Education Code for the time being, which has the force of law, may have much to say to the architect who is building a Board school, and the Education Acts may enable him to defy the Public Health Act, or similar Acts, in certain respects. Or, if you are building for a railway company, there will be the special Acts laying down, it may be, further restrictions, or enabling you to escape from those which apply to buildings in general. I will not enter into the questions which arise when these Acts, or when sections of Acts, or when a by-law and a statute seem to conflict. I hope to consider this matter more fully in a pamphlet which I propose to publish.

And now we proceed to consider the provisions themselves. I have been forced to use this word "provisions," as I have been unable to find a word which is at once so comprehensive and so little calculated to mislead.

The first class of negative provision for the benefit of the public is that which regulates the vista of our streets, either in accordance with a "prescribed line" under the Public Health Act, or through a "governing building" (a term which I will explain) under the Public Health (Buildings in Streets) Act. These methods differ in several important respects. The first deals only with "buildings or the fronts thereof taken down to be rebuilt or altered," and not with buildings being erected where none stood before. The second deals with new buildings or new additions in front of or new additions on the top of old buildings. In the first the line of buildings is the general line of all the houses in the same street, but depends for its very existence on its being prescribed by the Urban Authority. In the second it is not the general line of buildings at all which regulates, but merely the most backward next-door neighbour, called the "governing house," no prescribing being necessary, but consent to build forward being required. The first, the prescribing method, gives compensation and exacts no penalty, but is enforcible by the ordinary methods of injunction and indictment. The second exacts a penalty, which can only be recovered before Justices of the Peace. In the case of the prescribing method an offending building must be pulled down by the defendant if the High Court make an order to that effect. In the second, the building which projects beyond its most backward neighbour cannot be pulled down at all.

To consider the first or "prescribing" method under Section 155 of the Public Health Act, 1875. This enacts that "where any building or the front thereof in any street has been taken down to be rebuilt or altered the Urban Authority may prescribe the line in which 'its successor' in the same situation" is to stand, and the successor (as I may call it) shall be erected in accordance with such prescription. Compensation is to be paid or tendered to the owner; the amount to be ascertained, if necessary by arbitration, in the usual manner. Short though this section is, almost every word of it has been a text for judicial interpretation and a cause of innumerable disputes. You may ask, "Is my structure a 'building' so as to be set back?" The answer is, "Even if your structure were only a wall 15 ft. high or a cowhouse, back it must go, if it is large enough and intended to be permanent."

Then again, you may question whether it is in a "street" for the purposes of this section of the Act. Well, if there are houses more or less continuous along one or both sides of your road, and that road is used for public carriage traffic, it is a "street." Thus Claremont-road is a "street," though on one side stretches our breezy town moor. A mere foot passage with houses on either side, such as we see in Durham or in our other quaint old cathedral towns, will not be a "street," and I think (though the matter has not been clearly decided) that the road must be one which has been dedicated to the public, *i.e.*, a public carriage-way. My reason for this opinion is that the provisions as to building line are provisions for the benefit of the public, and therefore the authority would seem to have as little right to regulate the vista of a private street, as it has to choose the pattern of your drawing-room carpet.

One more question. Suppose that, as shown in our first diagram (fig. 1), in front of your terrace lies a footway, and in front of the footway a common garden extending the whole length of the terrace, will the terrace be in the street? On the whole I am inclined to think, having regard to decided cases, that this will depend on what openings there are from the common garden into the street, and also as to whether or not the footway is public. The more nearly

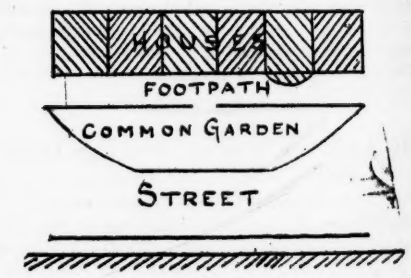

Fig. 1.—"In the Street."

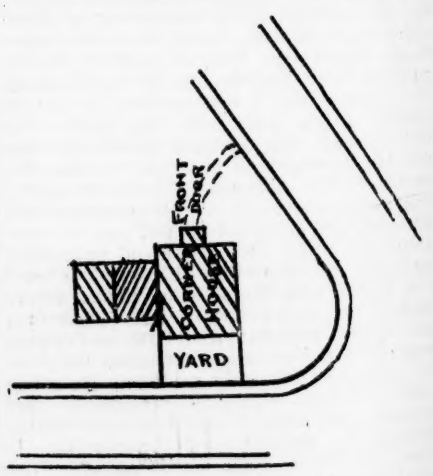

Fig. 2.—"In the Street."

the terrace with common garden is assimilated to the ordinary case of houses with separate gardens opening into the street, the more likely is such terrace to be held to be in the street. An increase of the accessibility of the

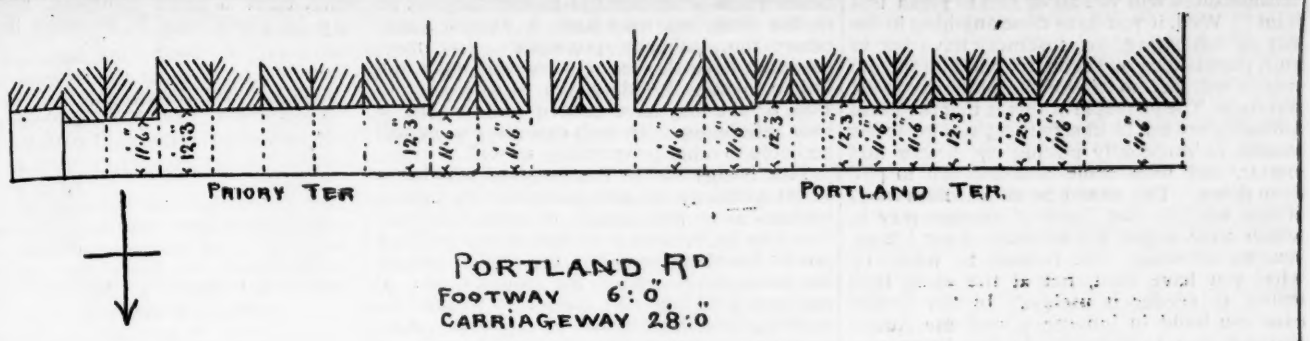

Fig. 3.—The Fear v. Freebody "line."

common garden into the street would have this effect.

Another question, however, which has been decided by numerous cases, may arise for your consideration. You are engaged in rebuilding that charming building, the corner house (our second diagram (fig. 2) shows how the house was situated before demolition), a house which enjoys the barrel-organs of both streets; one street (the aristocratic street) used to boast of the front door, while the other street was for the milkman and the butcher's boy. Is the corner house in the latter street also? There is no doubt that it can be and probably is, but this will be to some extent a question of fact.

Then, again, what is the meaning of "taken down in order to be rebuilt and altered?" It means, substantially, taken down. A case which may be useful in explaining this is that of the Attorney-General *v.* Hatch. In this case the owner of a baker's shop which projected beyond the building line wished to turn it into a grand two-story-windowed milliner's shop. He accordingly took out the fronts of the ground and first floors, but left undisturbed the second story, shoring it up first with wooden beams and later with iron girders. The Urban Authority came with their compensation money in their hands, but the owner was not to be tempted, so an action was commenced against him. In this it was held that in order to bring a building under the provisions as to the prescribed line, the front of such building must have been completely pulled down (that is, as far as the foundations), though a few bricks of the front left standing would not save the owner. Conversely, in another case it was held that a building whose front was left up as far as the first floor cannot be prescribed for, as its front has not been pulled down.

Now you have heard these cases, I think a word to the wise will be enough. If you want to keep your own position in a street, do not be in too great a hurry to pull down your building. Supposing you have an ugly yellow brick house which is fast going to decay, but which, on account of its forward position, commands an interesting view up and down the street, and covers valuable ground. You wish to turn this into a "marble hall." You can, if you like, pull down the front all at once, in which case you will lose your position in the street. Or you can pull out the bottom part of the front and put in your marble, meanwhile shoring up the higher stories; then restore the higher stories until the whole building has a new front. Or you may begin on the top stories. A local authority who tried to fix you with a prescribed line would be in this dilemma. You could always say, "I have not pulled it down, it is too early to prescribe"; and also at the same time, "I have begun to build it up, it is too late to prescribe."

Another question: Suppose you have two semi-detached houses and pull the front of one down, have you pulled down a whole front or only half a front? Well, if the houses were separately occupied and had no internal means of communication, you have pulled down a whole front, and the authority may prescribe for the front that you pull down. But if you have pulled down the front wall of your house it will not avail you that you have left the rest of the building standing. Suppose, however, that you have pulled down the whole front, extending, say, a foot back, can the authority prescribe a line a yard back? No, I think, certainly not. Their line cannot go back further than the site you have vacated.

Now we come to the meaning of the word "prescribing." If a surveyor authorised by the Council comes along the road, and points with his stick, or paces out the line, saying, "Thus far and no further shalt thou go," has he "prescribed," or must he send for pen, ink, and paper? He has duly prescribed, and need not do so in writing. The authorities, however, must prescribe a line particularly in each case. They cannot do so by a general notice or by by-laws, though they may possibly be able in certain special circumstances to obtain much the same effect by by-laws as to new streets and air spaces, as we shall see.

Next, as to the word "line."

It should hardly be necessary for a lawyer to teach you how to draw a line, but there is some law in this matter. In Tear or Sear or Fear *v.* Freebody (no one seems to know certainly the plaintiff's name) the only decision as a matter of law with regard to the meaning of the word "line" was that it need not be a mathematical or geometrical line; but the case is in other ways instructive. The facts were as follows: Portland-road, as you will see in fig. 3, ran from east to west. At the extreme east on the south side of the street was a house which plaintiff was building flush with the footpath; then adjoining it followed, going westwards, a row of nine houses called Priory-terrace. This row stood back some 11 or 12 ft. Of these houses the first two were forward, the next five back, the last two again forward. The forward houses projected beyond the backward houses by 9 in. Then came a gap of 4 ft., and then two houses called Boundary Cottages, standing back some 11 or 12 ft.; then another gap of 4 ft., followed by Portland-terrace, whose houses also stood back some 11 or 12 ft. This last terrace consisted of twelve houses, the first a wider house standing forward, the second a narrower house, also standing forward, then came three narrower houses standing back; then came two narrower houses standing forward; then came three narrower houses again standing back, then a narrower house standing forward, then a wider house also standing forward. The difference between the backward and the forward houses was 9 in. The backward houses of Priory-terrace and Portland-terrace stood at the same distance back from the pathway, and so did the forward houses. You thus see the houses made quite a pretty design. The arbitrator found that each row—namely, Priory-terrace, Boundary Cottages, and Portland-terrace—had a line of buildings, and, also, that all these rows taken together had one general line of buildings. These were the circumstances, in which the judges decided that the line of buildings need not be a mathematical one. The judge also said that the object of the provisions as to line of buildings was to secure the ornamental character of the street. The Court evidently approved of the arbitrator's finding. I may, however, remark two things. It was not necessary for the case that all three rows should have one line of buildings. It was sufficient that Priory-terrace, which was next to plaintiff's house, should have a general line. Secondly, the question whether houses have a line is a question of fact, and therefore precedents cannot affect it.

Another rather curious case. A. owned a pair of semi-detached houses and pulled one down. To the left lay the other semi-detached house, and beyond it, further left, a row of public buildings which retreated further back. To the right of A.'s houses stood a row of buildings in line with them. You would have thought that A. could have built on the same site as before, since he had one house on one side and a whole row on the other to keep him company in a forward position. But no. He had to put his rebuilt house back to the line of the public buildings, thus making a most irregular line, for on the left there would thus be a row of public buildings standing back; then there would come A.'s untouched house standing forward, then his rebuilt house standing back, then the row of houses standing forward. The case, however, is a Scotch one, and this may be the Scotch idea of a straight line. The reason why it was so decided was that A.'s two houses were, for this purpose, treated as one building, and the untouched one was only considered as half a building, and therefore ignored as a factor in regulating the building line.

Now suppose that next to the house you have demolished or whose front you have taken down there stands, not a row of houses, but a row of old sites, with perhaps a stone or two standing above their naked foundations. Can these interesting ruins be taken into account so as to set the line of buildings either forward or backward? Yes, they can, unless the owner has clearly abandoned all intention of rebuilding on these foundations. A mere delay, however, of two or three years will not be evidence of intention on his part not to rebuild.

Now suppose, on the other hand, that next to the house whose front you have taken down a builder is putting up a row of unfinished houses. Your business will be to begin to rebuild before he has finished or nearly finished. For an unfinished house cannot, according to reported decisions, be a governing house for the purposes of the Public Health (Buildings in Streets) Act, and I apprehend that neither can it be taken into consideration in prescribing the line of buildings under the Public Health Act. (Of course these houses must be on new foundations, or they will come under the previous case.) Before the builder has finished his houses the Authority cannot make you keep in line with them. After you have begun the Authority cannot prescribe for you at all. You will thus escape their attentions.

The Urban Authority can prescribe a line, but the Rural Authority can only do so if they obtain powers from the Local Government Board. You may, therefore, find that owing to the locality in which you are building you are free from anxiety on this point. Then as to the compensation. It need not be tendered when the line of building is prescribed. The amount may be fixed by arbitration in the usual way. It is for you to consider whether it will be better to accept the compensation offered, or wait for the arbitrator to award a greater or less sum, or to refuse the compensation and go to the expense of the piece-meal demolition and restoration which I suggested above.

If, in spite of the luring bait of compensation, you refuse to set back your building after a proper prescribing, the Urban Authority has two methods of punishing the owner and builder, but cannot punish the architect. They may get an injunction to restrain the continuance of the offending work or to command the offenders to pull it down, but they cannot take the law into their own hands and pull it down themselves, except where it actually encroaches on a public way. They may also indict the owner or builder criminally. They can thus have his building pulled down by one Court and punish him in another.

Counsel for the defence may have several ways of meeting the action or prosecution. He may defend on the merits by denying that the structure whose front was pulled down, or the structure put up in its place, was a building (as, *e.g.*, if it was a small railing); or he may show that the street in which it stood was not a "street" for the purposes of the prescribing method or that it was not "in" that street. Or he may bring witnesses and adduce arguments to show that the building, or the front thereof, was never really pulled down, or that you did not vacate the site as far back as the Authority wished to set you. Or he may show that the line has not been prescribed in time. In what

circumstances will you allow him to plead this point? Well, if you have done anything in the way of rebuilding, for instance, have put in fresh foundations or begun to build on the old ones, it will be too late for the Authority to set you back. The principle of this is that the Local Authority are not at liberty to let you go to the trouble of innocently putting up bricks and mortar, and then come and ask you to pull them down. This would be an atrocious waste of your labour. But there is another way in which they might try to waste your labour, viz., by allowing you, indeed, to leave up what you have built, but at the same time trying to render it useless. In the former case you build in innocence, and the Authority ask you to unbuild. In the latter case you build in all innocence, and the Authority ask you to make your building futile; to, as it were, morally and financially demolish it. Suppose, for instance, you have pulled down, and then, without having built anything, not even a foundation, on the site of your demolished front, you have put up at the back of that site a building which absolutely requires some building or other in front of it as a necessary complement. For instance, you have pulled down a building, and the site of the front of such building still remains vacant; but you have already begun to build a nave of a church at the back, and the Authority try to cut off the chancel and vestry which you intend to build in front of the nave, by prescribing a line. The Urban Authority are not entitled to do this. They have prescribed too late, for, though you have not begun to build on the front site, you can truly say to them, "You let me put up a building, and then try to make it useless by cutting off a necessary adjunct. I should not have put it up at all if I had known you would do this." But if, for instance, you have begun work on a school at the back of the vacated front site which the Authority wishes to keep open, and the buildings which you wish to put up in front of it, and of the prescribed line, are merely annexes, such as a lavatory, which could either be dispensed with or put elsewhere (and which, of course, I am supposing you have not yet begun to build), the Local Authority can, in this latter case, prescribe so as to cut off the site of your intended annexes. Delay, however, will be fatal to the Authority, though they have not been guilty of negligence, and though the builder had good reason to know that they were thinking of prescribing a line.

Your counsel, again, might be able to show that, before you began to pull down, you had good reason, not merely from the inaction, but from the general conduct of the Authority, to consider that they had no intention of prescribing a line, and that, on the faith of this, you were led to act as you did in pulling down. And, of course, if, before you began to pull down, you told them where you were going to rebuild, and they approved of your intention, they could not but lose their case. It may, therefore, be wise, and will usually be obligatory, before you pull down the front of a house, to tell the authorities where you intend to rebuild. It has been decided, however, that the Local Authority could prescribe a line for a builder after having just permitted another builder to erect a house in advance of the line.

We will now presume that the Local Authority has been punctual in the proper sense of the word, that is, neither too early nor too late; that you have come under the provisions as to prescribed line; and that they have drawn the line correctly. Can they keep the owner waiting an indefinite time for the writ, or, perhaps, for the policeman who is to lead him off? Well, of course, if they are suing to prevent a building being put up, they must do so before it is put up. Otherwise there is no limit to the time they may wait. Counsel for the defendant, however, will not omit to dwell on this delay with all the eloquence at his command. If the case goes against you can you appeal? If the action is for an injunction you can; but if the offender is indicted, there is no appeal except for technical defects.

I said that the authorities have no other remedies but the above, and I here repeat it. They cannot sue you summarily. They cannot themselves pull your building down. If they want it down they must go to the High Court. It is true that the Courts have held that an Authority may refuse to approve your plans on the ground that they have contravened provisions other than those contained in the by-laws; but what of that? Disapproval is of itself merely a *brutum fulmen*. The legislature only requires approval or disapproval to be shown in order that the builder may not be in the dark, but may have a danger signal before the Authority proceeds. You may, however, have also brought yourself under the Public Health (Buildings in Streets) Act of 1888, or you may have broken some by-law in your rebuilding. In such case the owner will be liable to other proceedings as well.

This brings me to the question whether a Local Authority can set houses back by making by-laws as to new streets or new buildings. Can they by by-laws as to new streets set back an old demolished building, the whole of which you have pulled down to the ground floor? It has been held that they cannot by by-laws do, without compensation and by a penalty, what a section of the Act has allowed them to do with compensation; but for all this, if in rebuilding your old demolished house, or, at any rate, in building a house where none ever stood before, you proclaimed an intention of laying out a new street, then you may come under the by-laws. You will in such case be unable to build if, owing to the position of the house you intend to put up, you cannot do so without curtailing the street required by the authorities. They must, however, show that you had this intention of laying out a new street, either from plans which you have shown them and have begun to carry out on the land, or from work actually done in making or altering the boundaries of a road. They must also show that you would encroach on the actual footway or carriageway of the required street.

Next, can they set back an old, demolished building by by-laws as to air space? Well, if you have not contented yourself with pulling down the front, but have also pulled down the rest of the house to the level of the ground, I certainly think they can. Any disobedience to by-laws renders the offender liable to summary penalties, and your building will be pulled down and the expenses of removing it be recoverable against the owner.

There is a method of setting back old buildings, and that is by compulsorily buying the sites, but with this we are not concerned.

Now we come to the Public Health (Buildings in Streets) Act (1888), which, I may remind you, deals with new buildings as well as old, and only applies to urban districts or to such rural districts as have got leave from the Local Government Board to enforce it. In this last respect it resembles the prescribing method. Under the above Act you may not, without the written consent of the Urban Authorities, put up a new building, or put up a new addition in front of an old building, or put up a new addition on the top of an old building, in such a position that the new building or the new addition will project in front of the main front wall of that building next to you which stands furthest back and is in the same street. I shall speak of your neighbour's building as the "governing building."

What additions will be forbidden? Any addition that comes too far forward, if large enough. A small wall and a small conservatory might be legal, a large wall or a large conservatory would be illegal. What kind of building must your neighbour possess for it to be a governing building? It must, I think, be something in the nature of a house, as the Act speaks of it as having a "main front wall." As to what is a street, we have already discussed this matter, and we have also observed that a corner house can be in two streets.

Suppose the alleged governing house stands, for instance, 64 ft. back from the street, it cannot prevent you from adding to your building, as it can hardly be said to be in the street for the purposes of the Act. Then, again, suppose that your house is in an old street, and some one makes a new and wider street in continuation of this old street. Can you put up an addition which would be in front of the houses in the wide new street? Yes, certainly; the two streets are distinct. Again, it has been held that a wide street of palaces and a narrow back street, though one formed a continuation of the other, are not the same street. As to whether a building is in the same street, and also as to what is the "main front wall," we may refer to a Bristol case (fig. 4). In this case there was a shop, B, which the owner brought forward to near the roadway. Next to this shop, on the other side of the lane, and of a small area, was the wing, A, of the Blind Asylum. This wing stood back a considerable distance from the road. Then, beyond the wing, came a large courtyard, which ran a very long way back to the main body of the

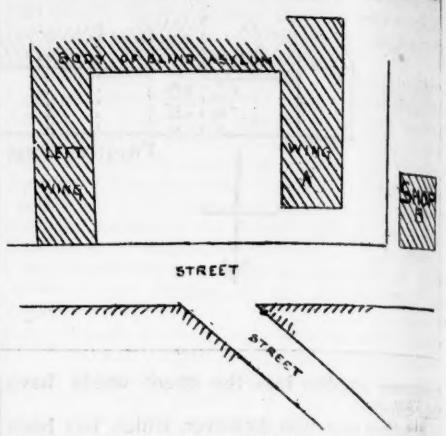

Fig. 4.—"Main Front Wall": Bristol Case.

asylum. Beyond this courtyard and right up to the road came the other or left wing of the asylum. It was held that the front of wing A was not the main front wall of the Blind Asylum, so as to keep the owner of the shop from building forward. The Court said that the governing "building must be looked at as a whole, its character, position, and distance from the house or building which is being erected must be considered. A particular wing must not be selected. Nor are two buildings necessarily in the same street because one faces the same street or a continuation of the same street as the other."

In another case as to main front wall it was held that a house which turned its side to the

Fig. 5.—"Main Front Wall."

street (fig. 5) could not be a governing house The side wall was not a main front wall.

What is to be done, then, if you want to build your house forward or add to it some addition which would project? The consent in writing of the Surveyor ought to be obtained, and it would be well to persuade him to enter it on the minutes of the Council, but no consent given by word of mouth, or presumed from the conduct of the Surveyor or the Authority, can avail you. In the absence of this consent there may be another method, which I indicate below.

With the penalty I will not deal now, as I deal with the recovery of penalties in a subsequent part of my paper. Suffice it to notice that there is a continuing penalty of 40s. a day or less, which does not begin till the day after notice that you have infringed the Act, and which must stop on the anniversary of the original offence when you first made any projection worth considering. Also note that a building put up in breach of the Public Health (Buildings in Streets) Act cannot be pulled down without your consent, except so far only as it projects into the footpath or roadway. A consideration of these two facts leads me to suggest that it may be worth your while to set your building forward, where, owing to circumstances, you are morally justified in not complying with the Act in this respect. Your building cannot be pulled down, and the owner cannot be made to pay more than 730*l.* and costs, and the extra land you gain may be worth more than this.

Another variety of the precept "thou shalt not build" confronts the architect in the case of open spaces, highways, and streets. It rarely occurs to the man who perambulates the park or the public street or highway to ask, "To whom does this belong?"

A private man or body of men may have the freehold, and always in the case of streets and highways does possess it. These rights must be respected, for they own the land up to the sky, and subject to any rights of subsoil being in some other private person or

company, they own the soil down to the middle of the earth. The smallest freeholder may justly swell with pride as he contemplates the vastness of his estate. Thus, even the Local Authority are not complete lords of their own streets, they cannot authorise the laying of trade pipes or make tunnels, for instance, for subways and the like without the freeholders' leave. Their sole right is to lay gas, water mains, sewers, or electric wires, and to protect these.

Or a Local Authority may in the case of open spaces be either the freeholder or the leaseholder and have rights as such. The rights of these freeholders and leaseholders, whether private men or Local Authorities, must be borne in mind when you wish to put out a projection overhanging, or to excavate a tunnel or cellar undermining an open space, highway, or street, and I will presume that you have respected these rights.

We pass on to the rights of easement which are vested in Local Authorities, that is, to those rights of the public to use and enjoy the open spaces and to promenade along the pavement, or to drive carriages or haycarts along the streets or highways without let or hindrance, and to have their gas and water mains or their electric wires and their sewers undisturbed by underground tunnels and vaults. If you wish to overhang an open space, highway, or street you need not get the consent of the Local Authority in their capacity of guardians of the right of way, but you must not obstruct or endanger the public in their use of such open spaces or ways. Thus in the case of a street or highway, your projection or bridge, if over the pavement, must be above man's height, and if over the street must be above the height of such vehicles as are likely to "use the street as a street." Thus it must be possible to take a haycart along the road and perhaps a fire-escape, but if (as I have heard of in America) a peripatetic chapel was to come that way, it could not complain of your bridge. Nor must you put a cornice which might drip over passers-by on a rainy day, as it has been held by weighty judicial authority that rain does fall.

If you wish to tunnel under an open space you must not disturb the soil so as to lessen the amenities of the park, and in the case of a street you must leave undisturbed such portion of the subsoil as the Authority may need for their gas-pipes, sewers, water-mains, or electric wires; and not only must these be respected, but the whole stratum in which they lie must be treated as sacred. As regards tunnels, vaults, or cellars under the carriageway of any street of the Urban Authority (and this would include a bridge other than a county bridge, but not a main turnpike road), you can only make such excavations with a written consent of the Local Authority. Such consent is only valid if in writing; it cannot be presumed from conduct. For breaking this rule there is a lump penalty, and a daily penalty recoverable before Justices of the Peace. The Authority may also remove the building and recover the costs of doing so before the same tribunal.

There may be other bodies having statutory and other rights in the surface of the land and a portion of the subsoil, and these you must respect. In the case of disused burial grounds you must not disturb the dead, unless you get special powers to do so.

If you wish to build upon the public park, or to overhang it so as to obstruct passage, you must get the consent of the Local Authority; but even if you are employed by them, they have a sacred trust for the public, and only such buildings as conduce to recreation can be placed thereon. You cannot (even by their orders) put up a town hall or a school, but you can put up a conservatory, a public library, or a museum, and (as it seems to me) such buildings as a boat-house, shelters, refreshment and other kiosks, baths, gymnasiums, and other places for indoor exercise, monuments, rooms for entertainments, or a gate-keeper's lodge. To choke up the whole park with these would, however, be no doubt illegal. No building of any kind, not even a bandstand, can be placed in a disused burial ground. Statues and monuments may be put up in the streets only if the Public Health Act Amendment Act is adopted. . . . (No freeholder's or leaseholder's consent can enlarge these powers. As to who are the authority to enforce these rights, and as to how these rights are to be protected, is a question I must leave for another occasion.)

Before leaving these sins of commission it may be well to consider the case of brick-burning. This is a nuisance at common law if it interferes with the amenities of the neighbourhood, but it is not subject to the technicalities of the Public Health Act regarding the nuisances or offensive trades. It is punishable by the ordinary methods if it does cause a nuisance.

Now for a few sins of omission against the public.

You have a quarry by the roadside. Have you fenced it? If not, beware of the complicated technicalities of Sections 91 to 111 of the Public Health Act (1875). You are erecting or repairing a building, or the front thereof, near the public street, and have not remembered that beautiful object the repairer's hoarding, usually resplendent with advertisements of cigarettes, and that inconvenient adjunct the hand-rail and the red lamp to warn the belated, as required by the Towns Improvements Clauses Act. If so, beware of the Urban District, or the Town Council, and remove your hoarding in good time where the Public Health Act Amendment Act has been adopted. In any case these hoardings must not impede traffic.

Or the builder may have left a heap or an excavation an unreasonable length of time in the street, and may have omitted to light such heap or hole at night. This is an offence under the Towns Improvements Clauses Act. Besides all these the owner may be liable for commissions or omissions under a local Act; and if there is a local Act, it may be well to see that proper water-spouts are put on buildings to prevent their dripping into the streets; so that while the indignant passer-by is looking up to discover where your waterfall comes from he does not fall into your unfenced cellar. Lastly, the doors of your building must be made to open inwards, unless it is a public building with special leave obtained. Any by-laws also must be carefully attended to.

DONATIONS TO THE BUILDING TRADES GIFT.

THE following materials have been promised towards the proposed Convalescent Homes for Soldiers, in addition to those already mentioned in our columns :—

For the Entire Set of Six Homes.

Messrs. D. Anderson & Son, and J. C. Broadbent & Co. (jointly).—The whole of the slag wool.

Messrs. Carter & Aynesley.—The entire locks.

Messrs. S. & E. Collier (Reading).—The entire ridge tiles.

Messrs. T. & W. Farmiloe.—The entire whitelead, colour, oils, turps, varnish, brushes, and paint pots.

Messrs. Hobbs, Hart & Co.—The entire locks.

Messrs. G. B. Kent & Sons.—Paint, toilet, and various brushes to the value of 50*l*.

Messrs. Roberts, Adlard & Co.—The laying of the entire slating (exclusive of slates).

The Velongo Slate and Marble Quarries.—The entire damp course slates, slate shelves, slabs, &c.

For Individual Sections of the Work.

Messrs. John Burton & Co.—10,000 ft. run of 4 in. by 2 in. rafters and ceiling joists.

Mr. J. F. Ebner.—Pitch pine flooring for the ground floor of three homes.

Messrs. Lindsay, Neal, & Co.—The heavy girders for a pair of homes.

Messrs. Macevoy & Holt (North Fleet).—Fifty tons cement.

Messrs. McNeil & Co.—The slag wool and roof felting for one home.

The Mural Decoration Syndicate.—500 yards of partitions.

Lord Penrhyn (Penrhyn Quarries).—10,000 slates.

Mr. Assheton Smith (Dinorwic Quarries).—10,000 slates.

Messrs. Geo. Trollope & Sons.—Doors, casements, and linings for one home.

Messrs. Twyfords.—The sanitary fittings for one home.

"A FALSE CLAIM FOR WORK DONE."—In a Note under this heading on page 30 *ante* we inadvertently did an injustice to Mr. J. W. Arnold, in the employ of Messrs. Broadbent & Co. of Leicester, by giving his name as that of the employee who got into trouble by charging for slaters work which had not been done, whereas Arnold was the agent of Messrs. Broadbent from whom the money was obtained. The name of the actual culprit was Richards. In looking at a rather long and involved newspaper account of the action we accidentally misplaced the names.

BUILDING TRADES' GIFT TO THE NATION.

THE following is a list of some of the principal things required to carry out the proposed Homes for invalided soldiers. These lists are given for one house; there are to be six cottages in pairs; for the whole six these items would of course be multiplied by six; for a pair of cottages, by two :—

Concrete and Bricklayer.

50 yards (cube)..	Grey stone lime.
50 tons	Portland cement for concrete in foundations, over site, and in rough cast.
2 yards (cube) ..	Clean washed pebbles, for rough cast.
No. 100,000 ..	Bricks, including 25,000 in red facing bricks.
500 ft. run ..	Plain moulded red bricks for chimney stacks, chimney terminals, &c.

Mason and Tiler.

100 ft. (cube) ..	Stone in entrance steps.
100 yards (sup.)	Encaustic or other fancy tile flooring for interior.
250 yards (sup.)	6 by 6 red or black-and-red or black-and-white tiling for paving under verandah.
500 ft. (sup.) ..	6-in. (or 4-in.) white glazed tiling or opalite at back of sinks, around baths, and in water-closets and lavatories.
500 ft. (run) ..	3 by 12 twice throated Portland stone (or terra-cotta) coping.
150 ft. (run) ..	4 by 10 sunk, weathered, and throated stone (or terra-cotta) sills, with tooled ends.

Carpenter.

200 ft. (run) ..	1¼ by 9 hips, ridges, and valley—small portion to hips, &c., moulded on under side.
5,000 ft. (run) ..	2 by 4 for rafters and ceiling joists, in lengths, say, 12 ft. and other lengths up to 20 ft.
1,500 ft. (run) ..	2 by 5½ for floor joists, in short lengths.
700 ft. (run) ..	2 by 2 bridging joists.
1,750 ft. (run) ..	2 by 9 floor joists (part 14 ft., others longer.
2,500 ft. (run) ..	3 by 4½ lintels and plates, also uprights to form front rafters to mansard. The bulk in 9 ft. or 18 ft. lengths.
100 ft. (run) ..	4½ by 6 lintel.
250 ft. (run) ..	3 by 9 plates and trimmer joists.
300 ft. (run) ..	4 by 6 purlins.
350 ft. (run) ..	6 by 9 framed curb at top of mansard.
1,000 ft. (run) ..	2 by 2 roll for zinc over verandah.
75 squares (sup.)	1 in. rough boarding to roofs and verandahs.
50 squares (sup.)	Roofing felt.
30 squares (sup.)	¾ by 2 slate battens.
No. 200	Sprocket pieces, about 2 ft. long, cut to shape.
500 ft. (run) ..	9 in. by 3 in. material for framed trusses on principal rafters (in unequal lengths).

Joiner.—Generally.

750 ft. (run) ..	1 by 8 moulded facia.
1,000 ft. (run) ..	1⅛ by 10 moulded skirting.
500 ft. (run) ..	1½ by 12 do. do.
250 ft. (run) ..	1 by 14 sunk and moulded skirting.

Floors.

30 squares (sup.)	1 in. thick best yellow flooring.

Doors and Finishings.

No. 15 sets ..	1¼ by 11 twice rebated jamb linings, tongued at angles, average size 6 ft. 6 in. by 2 ft. 6 in.
No. 25 sets ..	1¼ by 7 ditto ditto.
No. 3 sets ..	4½ by 3 wrot rebated and moulded door frames, for two side entrances.
No. 40	1¾ in. thick 2 (or 3) panelled doors, moulded both sides (two of these fitted with mouldings and beads for glass), size 6 ft. 10 in. by 2 ft. 6 in.
No. 1	Vestibule door and frame, with side lights to entrance hall, size 11 ft. high by 9 ft. wide.
No. 1	2 in. thick entrance door and frame, 9 ft. by 4 ft. top panels fitted with beads and mouldings, &c., for glass.
2,000	1 by 4½ moulded architraves for doors (part can be smaller stuff).

Casements and Frames.

No. 12	Wrot, rebated and moulded 1¾ in. casements and frames (4½ by 4), including narrow window boards, with notched and returned ends, size, with ordinary oak sill, 3 ft. high by 2 ft. wide (one light casements).
No. 2	Ditto, ditto, 3 ft. 6 in. by 2 ft. (one light casements).
No. 10	Ditto, ditto, 6 ft. 6 in. l y 5 ft. 6 in., but including mullions and transoms (three light casments with fanlights over).
No. 6	Ditto, ditto, 6 ft. 6 in. by 4 ft. and ditto (two light casements with fanlights over).
No. 1	Ditto, ditto, 10 ft. by 6 ft. 6 in., and ditto.
No. 20	Wrot, rebated and moulded, similar case and frames, size 4 ft. 3 in. by 4 ft., including narrow window boards, with notched and returned ends, also moulded cornice and moulded oak sill, about 12 in. wide and 4 in. thick (two light casements).
No. 20	Ditto, ditto, size 4 ft. by 2 ft. 3 in. (one light casements).
No. 1	Ditto, ditto, all as last, 4 ft. by 3 ft. 6 in., but with one mullion.
1,500 ft. (run) ..	1 by 4½ architrave mouldings.

Joiner.—Sundries.

250 ft. (run) ..	Cupboard fronting 9 ft. high, framed in small moulded panels, and including twenty lengths of 6 ft. front

		arranged as cupboards, the doors opening in two wings, with shelves or drawers behind, the whole fitted to square up inside face of mansard roof and economise furnishings.
No. 1	.. ..	Dresser 8 ft. long, 10 ft. high, with three drawers, pot-board, &c., complete (or suitable dresser of other dimensions).
No. 1	.. ..	Range of dwarf cupboards, 7 ft. long.
No. 2	.. ..	Cupboards for service room and store, about 10 ft. long, 8 ft. high, fitted with shelves.
No. 3	.. ..	Fixed 4 ft. seats.
No. 2	.. ..	Cupboard in dining-room, 4 ft. wide, 8 ft. high, fitted with shelves complete (hard wood).
No. 3	.. ..	Wall cupboards (any suitable size).
No. 1	.. ..	Small cupboard enclosure under sink in pantry and strong bearers, and draining boards to same.
250 ft. (run)	..	1 in. thick shelving and iron brackets.
No. 1 set	..	Lattice shelves for drying closet.
No. 1	.. ..	2 in. thick wood shelf and brackets for kitchen fireplace.
100 ft. (sup.)	..	Shelves and iron brackets.
No. 1	.. ..	Match-board cover to cold water tank in roof.
No. 1	.. ..	Trap door, linings and bolts complete, for access to roof.
No. 1.	.. ..	14 in. tread step ladder, with hooks and eyes.
		Staircases.
No. 1	.. ..	Oak (pitch pine or deal) well-finished staircase 4 ft. wide, comprising 20 treads and risers, bull-nose step, 5 newels, 40 ft. handrail, and 75 balusters (turned or fancy), including apron linings, and moulded nosings to landings (to design).
		Verandah and Fence.
No. 25	.. ..	Framing to verandah posts, 6 by 6, wrot and stop chamfered, each about 10 ft. long, with moulded caps.
400 ft. (run)	..	4 by 6 wrot and moulded rails at top of ditto.
No. 25	.. ..	Plain-shaped heads out of 11 by 1 in., 5 ft., 7 ft., 9 ft., and 13 ft. lengths.
400 ft. (run)	..	Special pale fencing, 2 ft. high, comprising 4 by 3 wrot sill, 4 by 4 wrot, moulded and shaped top rail, 6 by 6 posts, and 1½ by 1½ square balusters.

Where labour is offered also, it should be noted that the site is 1½ miles from Brookwood Station.

Offers of contributions will gladly be received by "The Executive Committee, Building Trades' Gift, 1, Waterloo-place, S.W."

For plumbers' and other work we may give particulars of what is required later on.

THE ARTISTS' WAR FUND EXHIBITION.

ONE does not generally expect to find that the works which remain in an artist's possession represent his best productions, but nevertheless the collection of pictures and other works of art at the Guildhall, given by artists to be sold for the War Fund, is of more interest than we expected. Some of the pictures, such as Sir L. Alma-Tadema's "A Flag of Truce" (90), a half-length of a girl holding up a vase of white flowers, were perhaps painted expressly, but we imagine most were not; and though there are some odd or valueless works, on the whole it is a very pretty collection, and quite worth a visit for other than patriotic reasons.

Among the principal works given are "A Shadow of the Future," by Lady Alma-Tadema; "Bad News," by Mr. J. H. Lorimer; "A Portrait Study," a fine half-length by Mr. Watts; "White Roses," a half-length by Sir E. Poynter; "The Knight and his Two Companions," by Mr. Byam Shaw, a new reading of the subject immortalised by Albert Dürer; "A Mothers' Meeting," children and their dolls, by Mr. James Clark; "A Bend of the Brook," by Mr. Alfred East; "An English Glade," a lovely little work by Mr. H. W. B. Davis; "Forgiven," by Mr. J. F. Bacon; "Will He Come," a delightful dog study by M. Riviére; "Hallow-e'en," by Mr. John Collier; and "In Studland Bay," a large and very beautiful landscape by Mr. Ernest Parton. The smaller rooms contain a good many interesting works, which we have not space to mention. Not to forget the sculptors, Mr. Natorp has given his fine life-size bronze, "Atalanta," and Mr. Onslow Ford and Mr. Thornycroft respectively statuettes of their well-known works "Peace" and "Teucer."

BELLS, ST. MARY'S CHURCH, BEVERLEY, YORKSHIRE.—A new peal of ten bells is to be placed in St. Mary's Church, Beverley. The old peal, which consisted of an octave, has been taken down, and the metal will be incorporated with the new bells by Messrs. Taylor & Co., bell founders, of Loughborough, Leicestershire.

Illustrations.

FONTS, SIENA CATHEDRAL.

THIS is a drawing made by Mr. Jas. B. Fulton while travelling as Tite Student of the Institute—one of the best of a remarkably fine set of sketches which he has brought back from his tour.

The fonts are in white marble, and were sculptured by Antonio Federighi, in 1462-63.

SKETCHES IN ITALY.

THE three sketches on this plate are, like the previous illustration, from the sketches done by Mr. J. B. Fulton as Tite Student. The following are his own comments on the subjects:—

SIENA.

"A view of one of the most picturesque towns in Italy. There stands the unfinished cathedral on the top of the hill, entwined by old houses, all nestling round about, forming a charming whole. Go, reader, and wander through these streets, and into the interior of the cathedral, because the streets are picturesque and the interior of the cathedral wonderfully beautiful.

ORVIETO CATHEDRAL.

Every one knows the principal façade of this cathedral, but few know the cathedral from this point of view. It is built of alternate bands of black and white marble. The old houses in front help to make the picture, but the charm lies in the treatment of the gable, which is masterly.

SS. VINCENZO ED ANASTASIO, ROME.

This interesting church is opposite the Fontana de Trevi, and was built from designs by M. Lunghi the younger, in 1650. It is built entirely of stone. Degraded in parts it may be, but there is a freshness and originality which gives this façade a remarkable suggestiveness."

FRONT OF BANK, BEDWORTH.

THIS drawing, showing the front of the Bedworth branch bank of the Leicestershire Banking Company, was exhibited at the last Royal Academy. It is a good example of the application of picturesque treatment to a bank in a country town. The treatment of the ground story in Derbyshire stone gives the requisite appearance of solidity to the bank department. The woodwork is of solid English oak.

The building was carried out from the designs and under the superintendence of Messrs. Goddard & Co, architects, of Leicester; the contractors were Messrs. Herbert & Son, also of Leicester.

DESIGN FOR A COUNTRY HOUSE.

THIS house was designed for a hilly site and in its general aspect had to be made suitable to its surroundings. The external walls were therefore to be built of the local stone, dressed smooth and left exposed in the more pretentious parts, but covered with rough-cast over the rest, while the roof covering was to be of stone tiles, the hips to be rounded off without hip tiles. In its general arrangement it consists of a main square block adjoined by the kitchen wing, which, again, is flanked by a wing of outhouses, thus forming three sides of a small paved court with a fountain in the centre. The hall containing the main stairs is square, lit by windows at a high level above the mezzanine; the square is then turned into an octagon by means of squinches, on which rests a hemispherical dome in coke-breeze concrete protected on the outside by lead. The dining-room communicates both with the paved court and the garden by means of steps, while a lobby leads into the garden from both the library and drawing-room. Above the latter is another drawing-room or morning-room on the first floor with a balcony commanding the view running along its entire length. The nurseries are on the first floor of the kitchen wing isolated by a passage from the main block. Above these are attics, the servants' bedrooms being arranged in the roof of the main block.

PIETER RODECK.

THE LONDON COUNTY COUNCIL.

THE London County Council reassembled at the County Hall, Spring Gardens, on Tuesday after the Christmas recess. Lord Welby, Chairman, presided.

Loans.—On the recommendation of the Finance Committee it was agreed to lend the Shoreditch Vestry 1,405*l.* for dust destructor; the Camberwell Vestry 9,100*l.* for paving and sewer works; and 1,000*l.* for paving works; the Islington Vestry 850*l.* for street improvements; and 4,977*l.* and 7,689*l.* for electric and street-lighting purposes; the Lambeth Vestry 2,642*l.* for paving works; the Poplar District Board 24,000*l.* for paving works; and the Guardians of Stepney Union 2,600*l.* for purchase of land.

The Works Department.—The Finance Committee submitted their half-yearly return of works completed. Only three out of fourteen works showed an unfavourable result, and in only one case, Wargrave Buildings, could the excess be regarded as serious. In eleven cases the works had been executed for the Council at a total saving on the estimates of 1,713*l.*, but the net result, owing mainly to the excess cost of Wargrave Buildings, was that the saving on final estimates was only 587*l.* At the time of the return (the report is dated December 13) the department had thirty works in progress, representing a total value of 647,850*l.*, the principal jobs being Horton Asylum, Hackney Wick sewer, North Woolwich and other drainage works, two fire brigade stations and four blocks of artisans dwellings. There were also seven other works not yet begun, including a block of artisans' dwellings. The Housing of the Working Classes Committee reported that the actual cost of the Wargrave-buildings was 1,082*l.* over the final estimate. That excess amounted to about 8 per cent. of the value of the work. The principal cause of the excess was the heavy percentage debited for general charges. During the time that those works were being carried out the department had so little work in hand that the general charges stood at 11·859 per cent. Had those charges been 6 per cent., as at present, the excess of cost over estimate would have been reduced to less than 2 per cent. on the cost of the work.

Mr. Beachcroft pointed out that with regard to the erection of artisans' dwellings by the Works Department, there had up to the present been an expenditure in excess of estimates amounting to no less than 19,301*l.* That was a very different story to the extensive savings upon works executed by the department which the Council were led to expect, and he hoped the time was not far distant when the operations of that expensive department would be restricted to engineering works, and when they would give up undertaking architectural works. The Council had erected ten blocks of artisans' dwellings with the following results: In three cases there had been a slight advantage, viz., 1,547*l.*, but in the remaining seven cases the aggregate losses amounted to 20,909*l.*

Mr. Burns, M.P., said that in his opinion the accounts were illuminating and satisfactory but he would like to see the Works Committee re-appointed.

Mr. E. White said the report was too small a matter to quarrel with. Out of works amounting to about a million, the report dealt only with an insignificant amount of 26,000*l.* However, it was only putting off the evil day. He was glad to hear Mr. Burns admit, at this late hour, that after all there were no large profits to be made out of building works; but he would point out that if the works had been put up to tender the losses would not have fallen upon the ratepayers.

Mr. Howell Williams thought the department had fairly held its own. For the last two years the department had had to work against a constantly rising market.

Mr. Westacott observed that the results had been more satisfactory since the abolition of the Works Committee.

The reports of committees in relation to the return were adopted.

Holborn and Strand Improvement.—The Improvements Committee reported that the total estimated cost of the Holborn to the Strand improvement was 4,862,500*l.*, of which 4,442,500*l.* was for property, 300,000*l.* for rehousing, and 120,000*l.* for paving and other works. The Council had already voted 2,000,000*l.* on account, and the committee now recommended a further vote of 2,742,500*l.*, being the balance of cost of the property needed for

the improvement. The committee were unable to incur liability until the estimate had been submitted to the Council, though as a matter of fact the actual payments in respect of the acquisition of property would in most cases not be made for some time, and would be spread over at least four or five years. Delay in the acquisition of the property might considerably increase the ultimate cost of the improvement.

Mr. Shaw-Lefevre said he and his committee had come to the conclusion that any delay would enormously increase the cost of the improvement. If the notices were delayed owners might improve their property, and so obtain larger compensation. Borrowing at high interest appeared at present to be inevitable, but the present stringent rate was not likely to continue, and, if it did, prompt settlements of value were more important. In this connexion he cited the case of the Opera Comique, where 66,000*l.* was claimed and a settlement was effected at 40,000*l.*

The recommendation of the committee was agreed to.

The Strand Improvement.—The committee reported—

"In connexion with the widening of the Strand, at Holywell-street, it is now possible to proceed with the demolition of the properties on the north side of the Strand between St. Clement Danes Church and St. Mary-le-Strand Church. When the properties are demolished, the widening of the Strand at the part in question can be effected. We have had before us working drawings, specification, and bills of quantities for the paving and other works required for the improvement. The Engineer's estimate of the cost of the work is 4,263*l.* In compliance with the standing order we have referred the estimate of the cost to the Manager of the Works Department, and he reports that he is of opinion that the estimate is sufficient. The cost of the paving and other works now in question was included in the estimate of the whole cost of the improvement already submitted to the Council by the Finance Committee. We have approved the drawings, and we recommend that they be referred to the Manager of the Works Department, with a view to the work being carried out without the intervention of a contractor."

This was agreed to.

Sites for Workmen's Dwellings, Tooting.—The Housing of the Working Classes Committee reported that they had formulated a scheme, at a total estimated cost of 500,000*l.*, for the erection of cottage dwellings at Totterdown-fields, Tooting. They recommended that the Council should approve an estimate of 45,000*l.* for the purchase of a site of 38½ acres. With regard to the details of the scheme, the Committee reported:—"The cottages which we propose shall be erected on this site will be constructed so as to provide for two families each. They will each consist of two self-contained tenements, one of two and one of three rooms. Separate gardens will be provided for each tenement, and on an average not less than thirty cottages will be built to the acre. The rent of the tenements should average about 7s. 6d. per week. We are unable to state precisely the cost per cottage, nor do we think it desirable to do so at the present stage. We have, however, forwarded to the Finance Committee a statement of the probable cost involved in laying out the estate. From this statement the committee will be enabled to report to the Council that no charge on the county rate will be involved by the erection of the cottages. We shall in due course submit for the approval of the Council plans of the proposed cottages, with full particulars as to cost."

Mr. Beachcroft opposed the scheme, which he regarded as more suitable for private enterprise. Some members of the Council were in favour of stimulating private enterprise by the competition of a public body, but in his opinion private enterprise needed no stimulus beyond the expectation of a reasonable profit. In this particular instance he had authority for stating that the action of the Council was likely to choke off private enterprise, because a large building firm—Messrs. Holloway Bros.—who had been prepared to erect a thousand small houses in the district, now wrote to him that they had decided to await the action of the Council. In his opinion it would be preferable that the Council should acquire land, and lease it out to builders, rather than become themselves the landlords of thousands of small tenants.

The Rev. F. Williams observed that the private builder could build more cheaply than the Council, and therefore he could not think that the committee's scheme would seriously interfere with private enterprise or the profitable investment of private capital.

Mr. Bruce said his objection was from the opposite point of view to that of Mr. Beachcroft. The Council were now awakened to the serious nature of the housing problem, but the misfortune was that their efforts to cope with it were utterly inadequate. In point of fact, their contributions to rehousing did not keep pace with the increase of the population of London. They had been nine months over the purchase of a site to house 12,000 persons, and during that period the increase of population had been 30,000. Before the houses were finished the increase would have mounted up to 160,000. Under those circumstances, he would have preferred a scheme to house 120,000, but he would urge the Council to lose no opportunity of contributing towards the solution of the problem.

After a long discussion, the committee's recommendation was agreed to by a large majority.

Precipitation Operations during 1899.—The Main Drainage Committee submitted the following table showing the quantities of crude sewage treated, chemicals used, and sludge sent out to sea, at each of the outfall works at Barking and Crossness during the past year:—

—	Barking.	Crossness.	Total.
	Gallons.	Gallons.	Gallons.
Sewage treated	45,011,527,000	32,668,287,000	77,679,814,000
Maximum daily flow	275,571,000	163,999,918	—
Minimum daily flow	72,810,000	63,410,952	—
	Tons.	Tons.	Tons.
Lime used	13,584	7,260	20,844
Proto-sulphate of iron used	2,925	1,993	4,918
Sludge sent to sea	1,505,000	785,000	2,290,000
Average per week	28,942	15,096	44,038
Refuse from gratings	4,164	905	5,069

Comparing the above figures with the returns for the preceding year, the quantity of sewage treated at both outfalls was more by about 2,109,547 gallons, while there was a decrease of 40,000 tons in the quantity of sludge sent to sea.

Tenure of Office of Sanitary Inspectors.—The Public Health Committee recommended, in regard to a petition from the Sanitary Inspectors' Association asking the Council to take steps to obtain an amendment of Section 108 of the Public Health (London) Act, 1891, so as to secure to sanitary inspectors the like tenure of office as is enjoyed by medical officers of health, "that the Sanitary Inspectors' Association be informed that the Council is advised that it has no power to spend money in promoting legislation with regard to the tenure of office of sanitary inspectors."

The recommendation was agreed to.

Theatres and Music-halls, &c.—The following recommendations of the Theatres and Music-halls Committee were, on certain conditions, agreed to:—

That the Council has no objection to the arrangements shown on the plan submitted by Mr. E. O. Sachs in regard to Covent Garden Theatre.

That Mr. W. G. Sprague be informed that the Council has no objection to the arrangements shown on the plan submitted by him in regard to the Grand Theatre, Fulham.

That Messrs. Wimperis & Arber be informed that the Council has no objection to the arrangements shown on the two plans submitted by them in regard to the London Pavilion Music Hall.

That Mr. F. Matcham be informed that the Council has no objection to the arrangements shown on the plan submitted by him in regard to the New Cross Empire.

That Messrs. Wimperis and Arber be informed that the Council has no objection to the arrangements shown on the two plans submitted by them in regard to the Piccadilly Art Galleries and Prince's Restaurant.

Factory and Workshop Acts, 1878-1895.—The Building Act Committee reported as follows:—

"By the provisions of the Factory and Workshop Acts, 1878 to 1895, the duty is imposed upon the Council of seeing that factories, workshops, and laundries situated within the area of the Administrative County of London, and in which more than forty persons are employed, are provided on the stories above the ground floor with such means of escape in case of fire for the persons employed therein as can be reasonably required under the circumstances of each case. Pursuant to our reference, the powers of the Council under the Factory and Workshop Acts are exercised by us, and we now present a report as to the progress which has been made in dealing with factories, workshops, and laundries in London (including the City). In October, 1891, a list of cases which appeared to come within the operation of the Acts was forwarded to the Council by the Home Secretary, and further cases have been notified to the Council from time to time. Altogether the Council's attention has been called to nearly 2,000 cases by the Home Secretary and through other sources. So far, over 1,000 cases have been taken into consideration by the Committee, and of these 432 have been dealt with in the manner hereinafter stated. In 135 cases of old buildings, alterations have been made and means of escape provided; in 36 cases in which new buildings were erected, the Council's certificate has been issued in respect of the means of escape; in 129 cases it was found that not more than forty persons were employed, so that the provisions of Section 7 of the Act of 1891 did not apply; in 2 cases the premises to which the Council's attention was drawn could not be identified; in 12 cases the number of persons employed was reduced to forty or less; in 25 cases it was found that the workpeople were employed on the ground floor only; in 37 cases the committee considered that the means of escape in case of fire were all that could reasonably be required; in 23 cases it was ascertained that the premises were not used as a factory, workshop, or laundry; in 16 cases the premises were found to be unoccupied; in 8 cases the premises were pulled down; in 6 cases the premises were destroyed by fire: and in 3 cases it was found that the premises were not situated within the Administrative County of London. We have had a return prepared of cases dealt with by the Council under the provisions of the Acts, and have given instructions for a copy to be sent to the Home Secretary for his information. There are at present under the consideration of the committee about 600 cases, and there are nearly 1,000 cases which have been notified to the Council by the Home Office still to be dealt with. In considering what requirements shall be made, the Committee make every endeavour to avoid unnecessary interference with the trade or manufacture carried on at the premises, and due consideration is always given to representations made by the owners. In the case of old buildings, requisitions specifying what, in the Council's opinion should be done to afford proper means of escape in case of fire, are sent to the owners, who in most cases do what is necessary. In the event of any owner being of opinion that the requisitions made by the Council are more than the safety of the persons employed on the premises requires, or that the requirements are excessive, he is at liberty to resort to arbitration. The fact that in very few instances out of the large number of cases dealt with by the Council, the factory owners have thought it necessary to avail themselves of this right of appeal, may, we think, be taken as evidence that in the main the Council's action has been considered reasonable by factory owners and their advisers."

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District Surveyor for North-East Deptford.—The Building Act Committee reported the death of Mr. J. B. Redman. District Surveyor for North-East Deptford.

After transacting other business the Council adjourned.

COUNTY COUNCIL.

ty Council reassembled at
ing Gardens, on Tuesday
recess. Lord Welby,

recommendation of the
t was agreed to lend the
405*l.* for dust destructor;
ry 9,100*l.* for paving and
,000*l.* for paving works;
850*l.* for street improve-
nd 7,680*l.* for electric and
ses; the Lambeth Vestry
orks; the Poplar District
paving works; and the
ey Union 2,600*l.* for pur-

ment.—The Finance Com-
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Only three out of fourteen
nfavourable result, and in
grave Buildings, could the
s serious. In eleven cases
executed for the Council
n the estimates of 1,713*l.*
wing mainly to the excess
Buildings, was that the
nates was only 587*l.* At the
rn (the report is dated
partment had thirty works
senting a total value of
cipal jobs being Horton
Wick sewer, North Wool-
drainage works, two fire
nd four blocks of artisans
were also seven other
gun, including a block of
The Housing of the
ommittee reported that the
Wargrave-buildings was
nal estimate. That excess
8 per cent. of the value of
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the time that those works
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would have been reduced to
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pointed out that with regard
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, there had up to the present
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less than 19,301*l.* That was
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following results: In three
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remaining seven cases the
mounted to 20,909*l.*
, said that in his opinion the
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to see the Works Committee

aid the report was too small a
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illion, the report dealt only
nt amount of 20,000*l.* How-
utting off the evil day. He
Mr. Burns admit, at this late
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of building works; but he
hat if the works had been put
losses would not have fallen
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lliams thought the department
its own. For the last two
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observed that the results had
factory since the abolition of
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committees in relation to the
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Strand Improvement.—The
Committee reported that the
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0,000*l.* for paving and other
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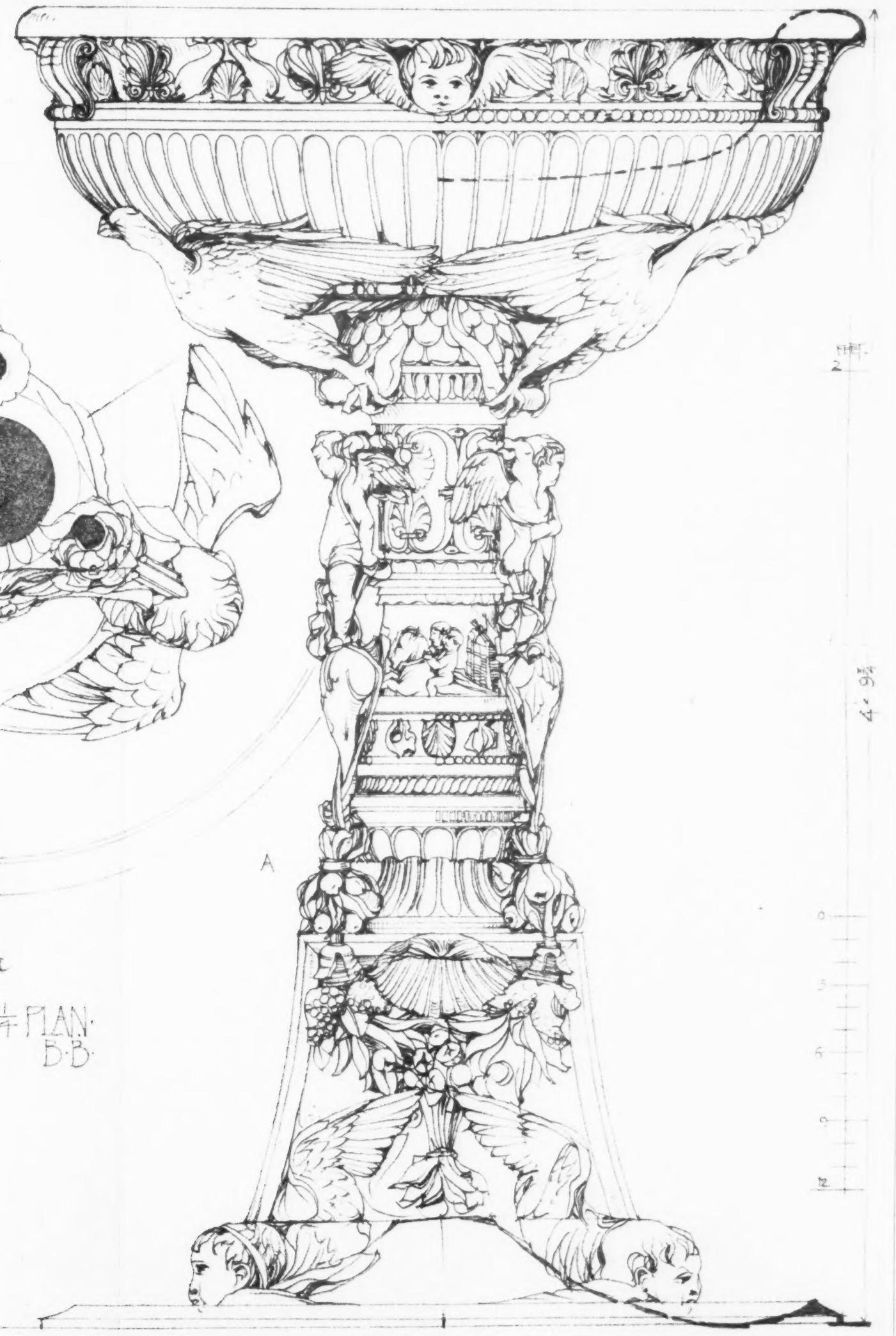
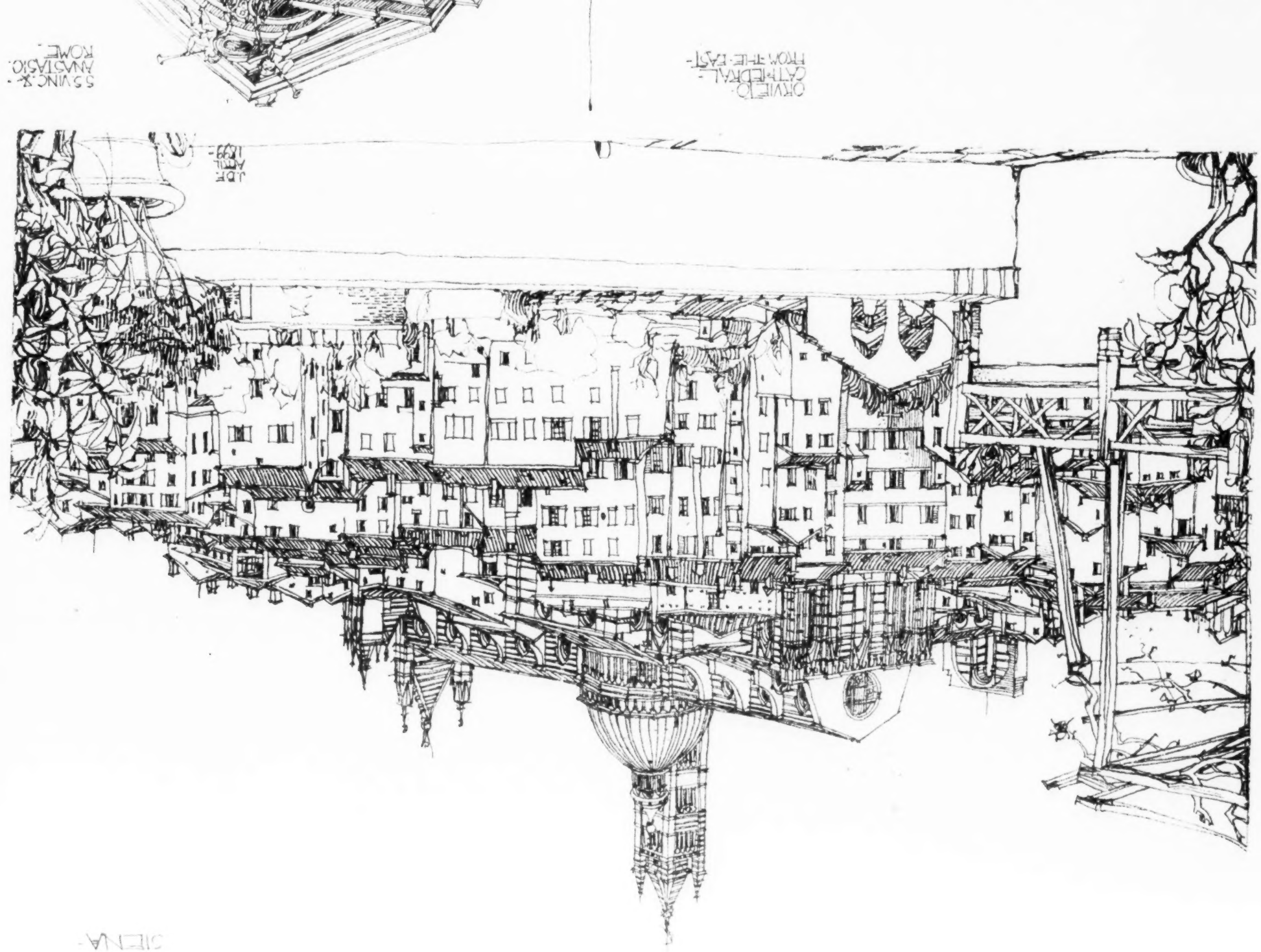
st of the property needed for

FONTS, SIENA CATHEDRAL.—Drawn by Mr. J. B.



INK-PHOTO SPRAGUE & Cº LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

BY MR. J. B. FULTON *(R.I.B.A. Tite Student, 1899)*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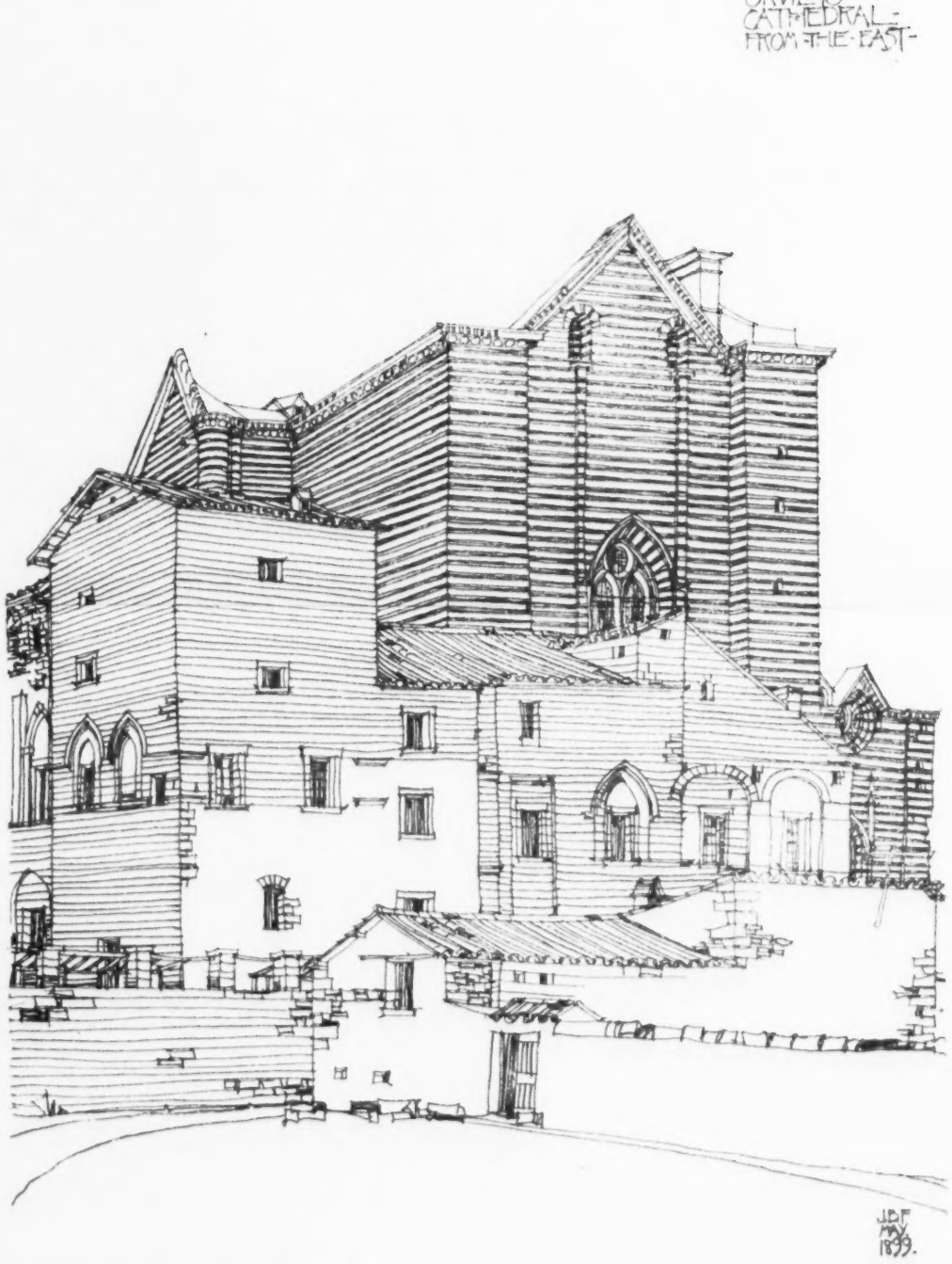
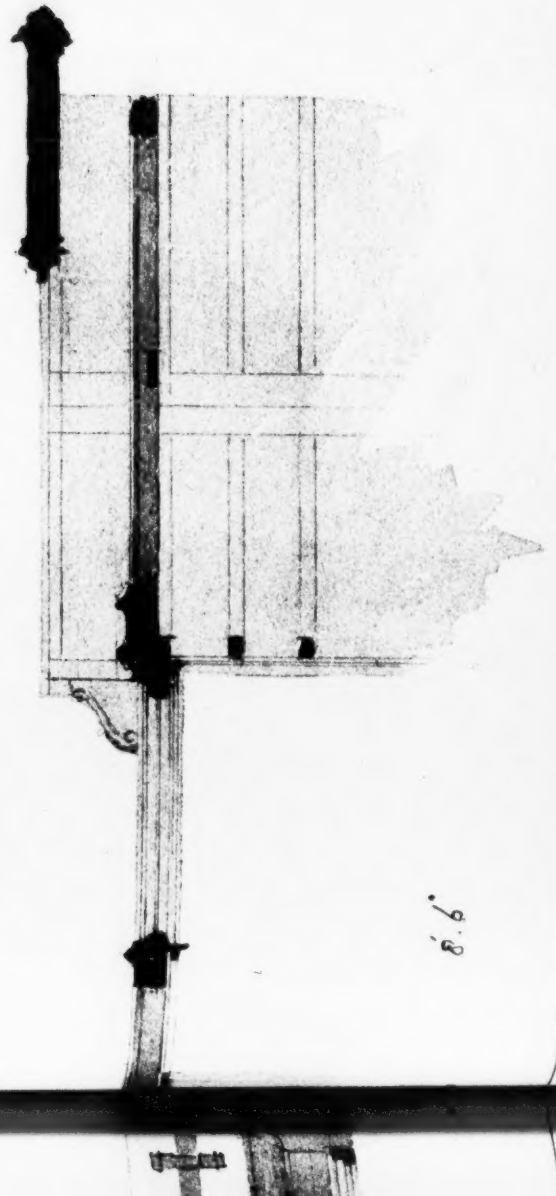
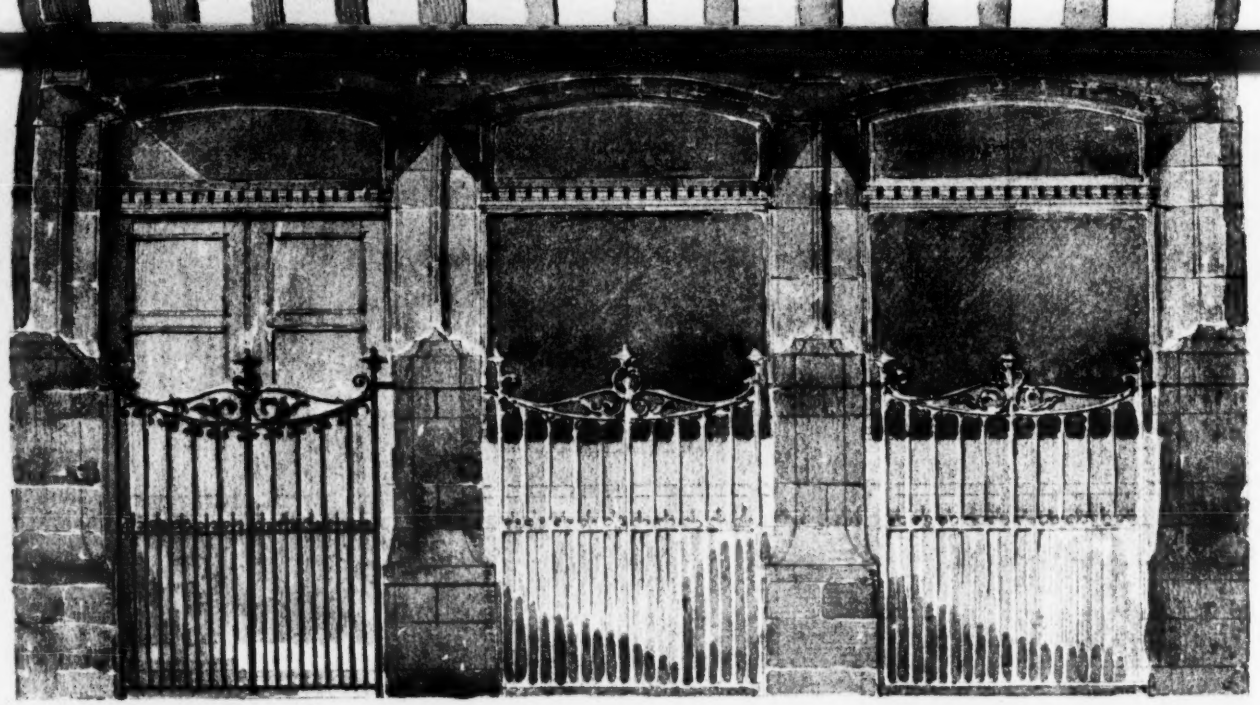


SKETCHES IN ITALY—By Mr. J. B. Fulton *(R.I.B.A. Tite Student, 1899)*

The Leicestershire Banking Co. Ltd
New Premises. Bedworth Branch.
Front Elevation.

H. Elphick and M.A. inv. et delt.





Elevation

SCALE.

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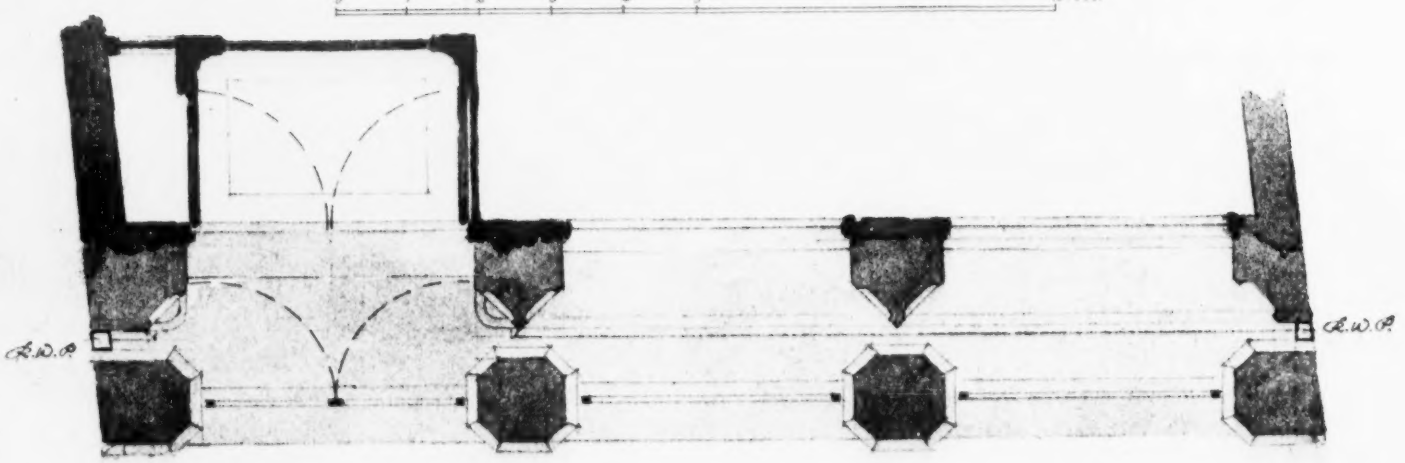
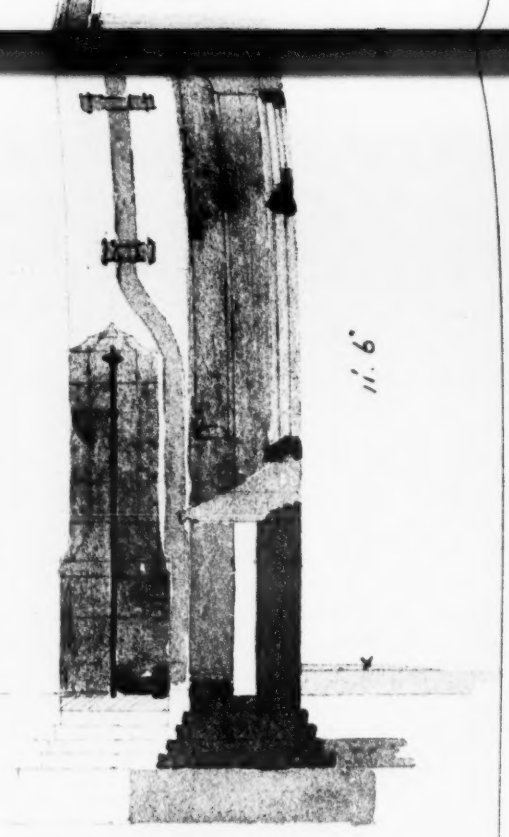




Section.

Goddard & Co. Mitcham.

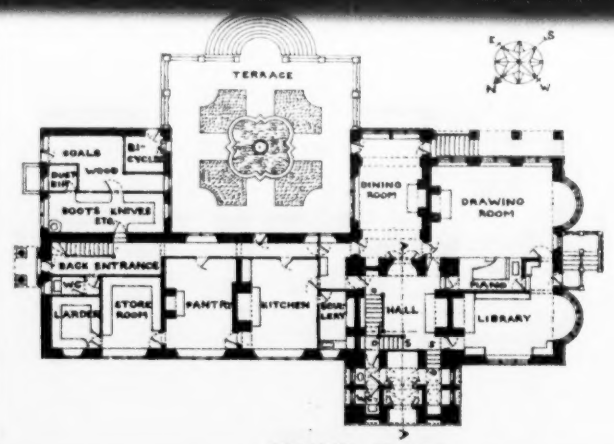
Leicester

Feb: 1898.

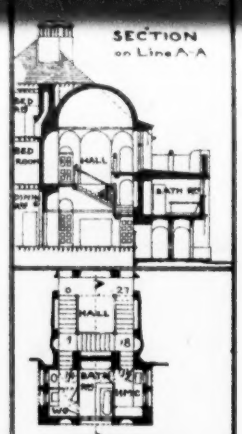
HAY PHOTO SPRAGUE & C° L.D. 4 & 5 EASTHARDING STREET FETTER LANE E.C.

DESIGN for a COUNTRY HOUSE

PIETER RODECK
Archt



GROUND FLOOR



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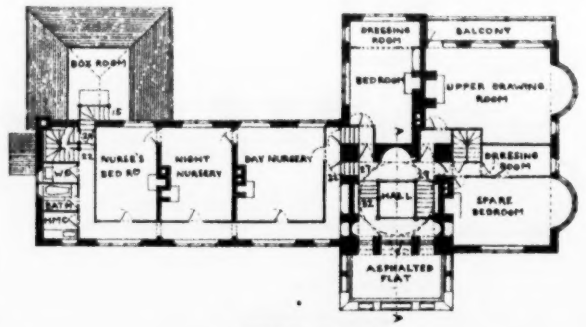
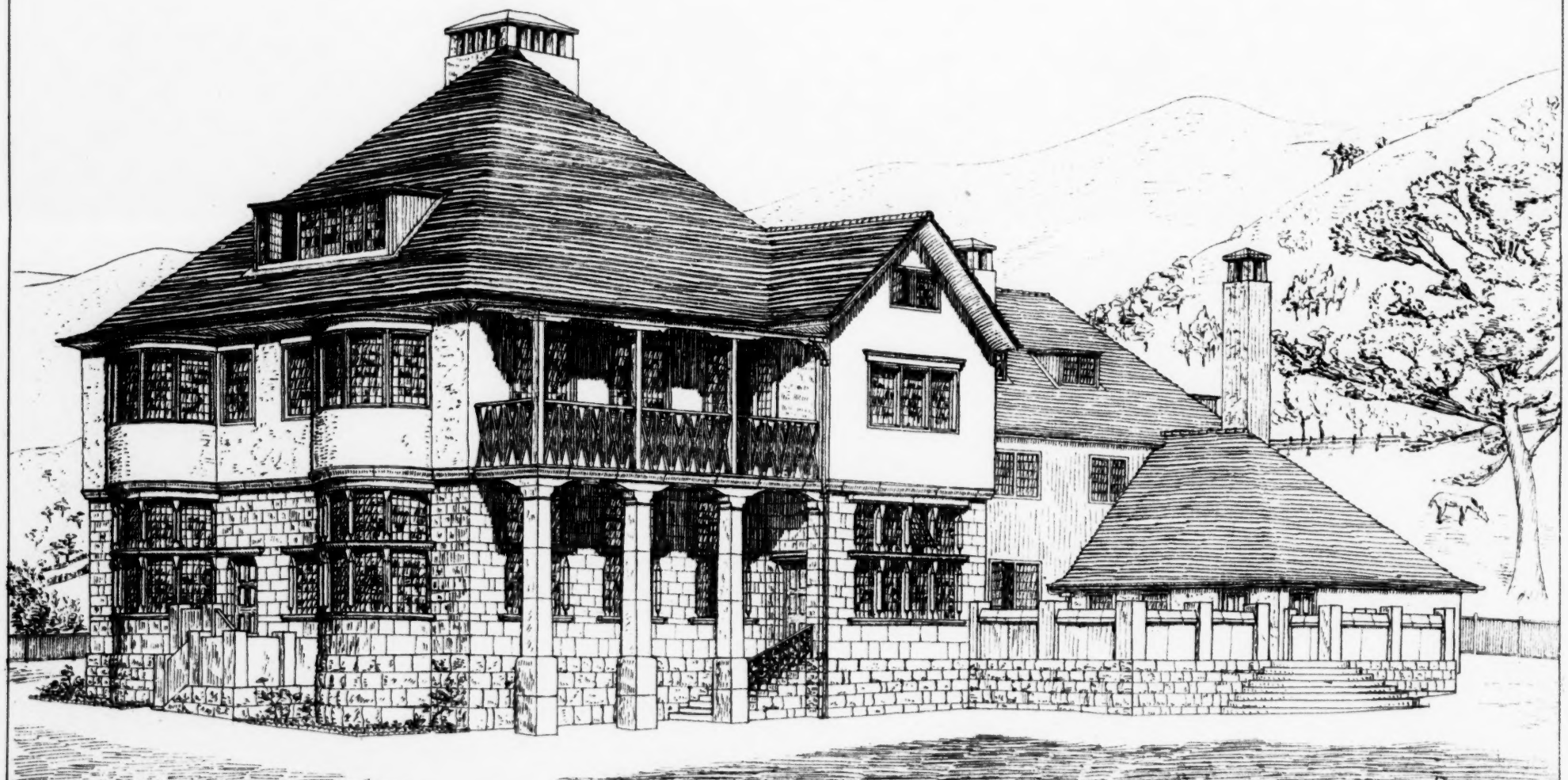
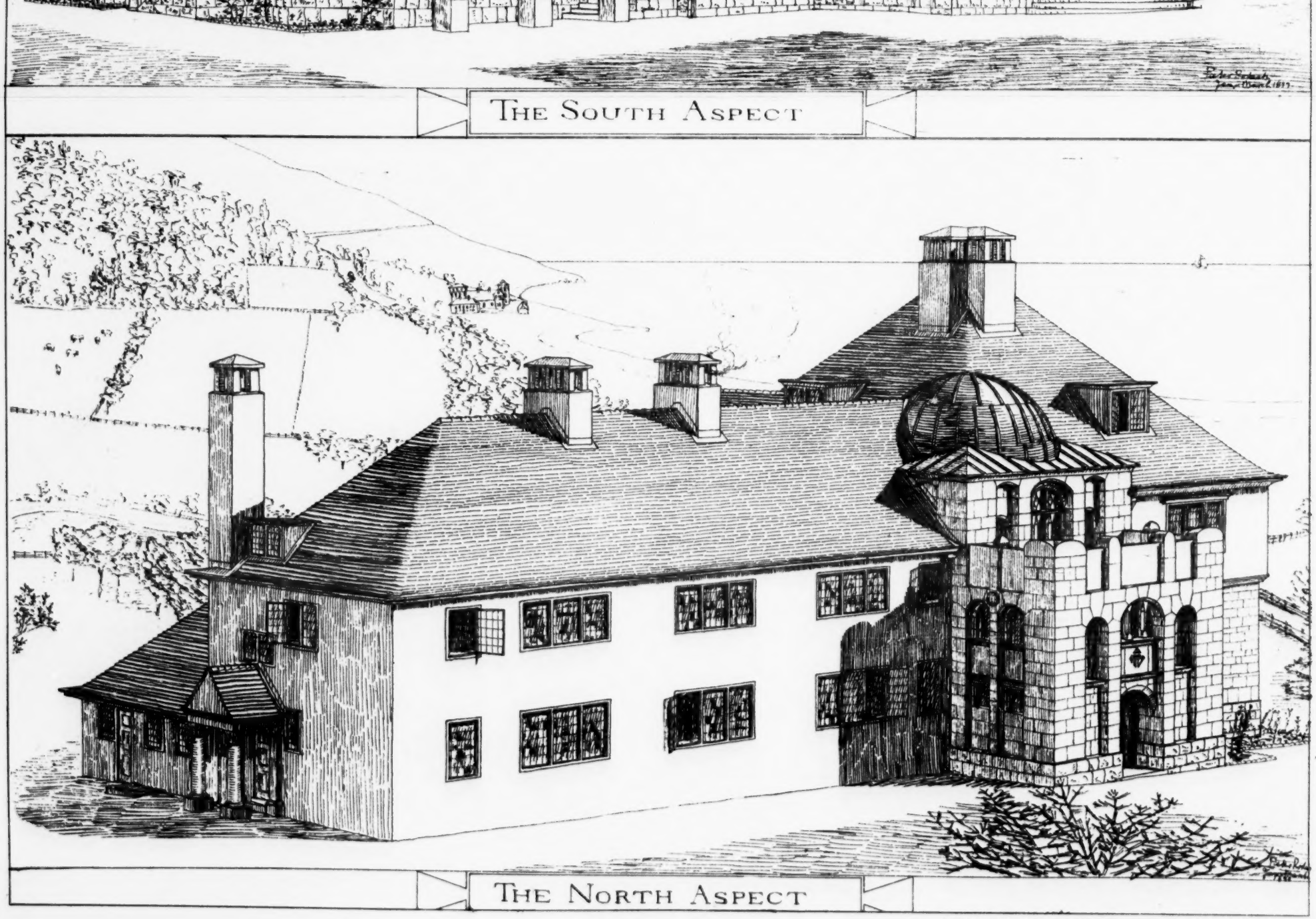


FIRST FLOOR





THE SOUTH ASPECT

THE NORTH ASPECT

PHOTO-LITHO. SPHAGUE & Co. Lth. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

the improvement. The committee were unable to incur liability until the estimate had been submitted to the Council, though as a matter of fact the actual payments in respect of the acquisition of property would in most cases not be made for some time, and would be spread over at least four or five years. Delay in the acquisition of the property might considerably increase the ultimate cost of the improvement.

Mr. Shaw-Lefevre said he and his committee had come to the conclusion that any delay would enormously increase the cost of the improvement. If the notices were delayed owners might improve their property, and so obtain larger compensation. Borrowing at high interest appeared at present to be inevitable, but the present stringent rate was not likely to continue, and, if it did, prompt settlements of value were more important. In this connexion he cited the case of the Opera Comique, where 66,000*l.* was claimed and a settlement was effected at 40,000*l.*

The recommendation of the committee was agreed to.

The Strand Improvement.—The committee reported—

"In connexion with the widening of the Strand, at Holywell-street, it is now possible to proceed with the demolition of the properties on the north side of the Strand between St. Clement Danes Church and St. Mary-le-Strand Church. When the properties are demolished, the widening of the Strand at the part in question can be effected. We have had before us working drawings, specification, and bills of quantities for the paving and other works required for the improvement. The Engineer's estimate of the cost of the work is 4,263*l.* In compliance with the standing order we have referred the estimate of the cost to the Manager of the Works Department, and he reports that he is of opinion that the estimate is sufficient. The cost of the paving and other works now in question was included in the estimate of the whole cost of the improvement already submitted to the Council by the Finance Committee. We have approved the drawings, and we recommend that they be referred to the Manager of the Works Department, with a view to the work being carried out without the intervention of a contractor."

This was agreed to.

Sites for Workmen's Dwellings, Tooting.—The Housing of the Working Classes Committee reported that they had formulated a scheme, at a total estimated cost of 500,000*l.*, for the erection of cottage dwellings at Totterdown-fields, Tooting. They recommended that the Council should approve an estimate of 45,000*l.* for the purchase of a site of 38½ acres. With regard to the details of the scheme, the Committee reported:—"The cottages which we propose shall be erected on this site will be constructed so as to provide for two families each. They will each consist of two self-contained tenements, one of two and one of three rooms. Separate gardens will be provided for each tenement, and on an average not less than thirty cottages will be built to the acre. The rent of the tenements should average about 7s. 6d. per week. We are unable to state precisely the cost per cottage, nor do we think it desirable to do so at the present stage. We have, however, forwarded to the Finance Committee a statement of the probable cost involved in laying out the estate. From this statement the committee will be enabled to report to the Council that no charge on the county rate will be involved by the erection of the cottages. We shall in due course submit for the approval of the Council plans of the proposed cottages, with full particulars as to cost."

Mr. Beachcroft opposed the scheme, which he regarded as more suitable for private enterprise. Some members of the Council were in favour of stimulating private enterprise by the competition of a public body, but in his opinion private enterprise needed no stimulus beyond the expectation of a reasonable profit. In this particular instance he had authority for stating that the action of the Council was likely to choke off private enterprise, because a large building firm—Messrs. Holloway Bros.—who had been prepared to erect a thousand small houses in the district, now wrote to him that they had decided to await the action of the Council. In his opinion it would be preferable that the Council should acquire land, and lease it out to builders, rather than become themselves the landlords of thousands of small tenants.

The Rev. F. Williams observed that the private builder could build more cheaply than the Council, and therefore he could not think that the committee's scheme would seriously interfere with private enterprise or the profitable investment of private capital.

Mr. Bruce said his objection was from the opposite point of view to that of Mr. Beachcroft. The Council were now awakened to the serious nature of the housing problem, but the misfortune was that their efforts to cope with it were utterly inadequate. In point of fact, their contributions to rehousing did not keep pace with the increase of the population of London. They had been nine months over the purchase of a site to house 12,000 persons, and during that period the increase of population had been 30,000. Before the houses were finished the increase would have mounted up to 160,000. Under those circumstances, he would have preferred a scheme to house 120,000, but he would urge the Council to lose no opportunity of contributing towards the solution of the problem.

After a long discussion, the committee's recommendation was agreed to by a large majority.

Precipitation Operations during 1899.—The Main Drainage Committee submitted the following table showing the quantities of crude sewage treated, chemicals used, and sludge sent out to sea, at each of the outfall works at Barking and Crossness during the past year:—

—	Barking.	Crossness.	Total.
	Gallons.	Gallons.	Gallons.
Sewage treated	45,011,527,000	32,668,287,000	77,679,814,000
Maximum daily flow	275,571,000	163,099,918	—
Minimum daily flow	72,810,000	63,410,952	—
	Tons.	Tons.	Tons.
Lime used	13,584	7,260	20,844
Proto-sulphate of iron used	2,925	1,993	4,918
Sludge sent to sea	1,505,000	785,000	2,290,000
Average per week	28,942	15,096	44,038
Refuse from gratings	4,164	905	5,069

Comparing the above figures with the returns for the preceding year, the quantity of sewage treated at both outfalls was more by about 2,109,547 gallons, while there was a decrease of 40,000 tons in the quantity of sludge sent to sea.

Tenure of Office of Sanitary Inspectors.—The Public Health Committee recommended, in regard to a petition from the Sanitary Inspectors' Association asking the Council to take steps to obtain an amendment of Section 108 of the Public Health (London) Act, 1891, so as to secure to sanitary inspectors the like tenure of office as is enjoyed by medical officers of health, "that the Sanitary Inspectors' Association be informed that the Council is advised that it has no power to spend money in promoting legislation with regard to the tenure of office of sanitary inspectors."

The recommendation was agreed to.

Theatres and Music-halls, &c.—The following recommendations of the Theatres and Music-halls Committee were, on certain conditions, agreed to:—

That the Council has no objection to the arrangements shown on the plan submitted by Mr. E. O. Sachs in regard to Covent Garden Theatre.

That Mr. W. G. Sprague be informed that the Council has no objection to the arrangements shown on the plan submitted by him in regard to the Grand Theatre, Fulham.

That Messrs. Wimperis & Arber be informed that the Council has no objection to the arrangements shown on the two plans submitted by them in regard to the London Pavilion Music Hall.

That Mr. F. Matcham be informed that the Council has no objection to the arrangements shown on the plan submitted by him in regard to the New Cross Empire.

That Messrs. Wimperis and Arber be informed that the Council has no objection to the arrangements shown on the two plans submitted by them in regard to the Piccadilly Art Galleries and Prince's Restaurant.

Factory and Workshop Acts, 1878-1895.—The Building Act Committee reported as follows:—

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District Surveyor for North-East Deptford.—The Building Act Committee reported the death of Mr. J. B. Redman, District Surveyor for North-East Deptford.

After transacting other business the Council adjourned.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

AT the meeting of the London County Council on Tuesday, the following applications under the London Building Act were considered. Those applications to which consent has been given are granted on certain conditions. Names of applicants are given in brackets. Buildings are new erections unless otherwise stated :—

Lines of Frontage.

Greenwich. — Rebuilding of the "Waterman's Arms" beerhouse, No. 8, Greenbank-terrace, Woolwich-road, Charlton, to abut upon Anchor and Hope-lane (Mr. W. Stewart for Messrs. Mann, Crossman, & Paulin).—Consent.

Lewisham.—Two houses, with one-story shops, on part of the site of The Limes, on the east side of High-street, Lewisham (Mr. H. T. Bonner for Mr. C. E. Frost).—Consent.

Peckham.—A one-story shop on the north side of Hanover Park, Rye-lane, Peckham (Messrs. H. Jarvis & Son for Messrs. Jones & Higgins, Limited).—Consent.

Hammersmith.—Two dwelling-houses on the western side of Goodwin-road, Greenside-road, Hammersmith (Mr. F. S. Hammond for Mr. C. S. Thurlow).—Consent.

Hackney, North.—An extension of the shop front to No. 181, High-street, Stoke Newington (Mr. W. Whincop for Mr. P. Pratt).—Refused.

Hampstead.†—An addition to the one-story building at the rear of No. 229, West End-lane, Hampstead, to abut upon Sumatra-road (Mr. J. Gibb for Mr. A. Jones).—Refused.

Hampstead.—A theatre-building on the south side of Pond-street, Hampstead, at the corner of Fleet-road (Mr. F. Matcham for Mr. W. Jones).—Refused.

Islington South.—One-story buildings upon part of the forecourts of Nos. 363 to 371 (odd numbers only), City-road, Islington (Mr. D. Joseph for Mr. H. Lovatt).—Refused.

Lewisham.—A one-story shop and addition to No. 108, Catford Hill, Lewisham, to abut upon Catford Hill and Beechfield-road (Mr. F. L. Pither for Mr. W. Green).—Refused.

Lewisham.—A one-story shop on part of the forecourt of No. 59, Perry Hill, Catford, to abut also upon Rutland-road (Mr. G. Tolley for Mr. A. Miles).—Refused.

Lewisham.—An addition at the rear of No. 74, Wells-road, Sydenham, to abut upon Dallas-road (Mr. G. Tolley for Mrs. J. Brisby).—Refused.

Paddington, South.†—A two-story addition to No. 95, Westbourne-grove, Bayswater, to abut upon Monmouth-road (Mr. S. Ward for Mr. J. Harries).—Refused.

Peckham.—One-story shops on part of the forecourts of Nos. 20 and 22, Gibbon-road, Nunhead (Mr. S. Green).—Refused

St. Pancras, West.—That Mr. H. F. Bangert be informed that the Council is not prepared to accede to his request for permission to retain a wood, iron, and canvas structure at No. 66, Hampstead-road, St. Pancras, unlawfully erected beyond the general line of buildings in Hampstead-road.—Agreed.

Woolwich.—Eighteen houses on the north side of Butcher's-lane, High-street, Plumstead (Mr. J. O. Cook for Mr. D. Wilson).—Refused.

Projections.

Lewisham.—The retention of a bay-window in front of No. 52, Crofton Park-road, Catford, and the erection of wood, iron, concrete, and tile pents over the entrances to Nos. 56 to 90 (even numbers only), Crofton Park-road (Mr. H. Standen).—Consent.

Lewisham.—Oak and tile pents over the entrances to Nos. 134, 136, 138, and 140, Crofton Park-road, Lewisham (Mr. G. Gould).—Consent.

St. George, Hanover-square.—Three iron balconies in front of Nos. 3 and 4, Sedley-place, Oxford-street, St. George, Hanover-square (Mr. J. Bishop for Mr. H. N. Benjamin and Alderman Sir Marcus Samuel).—Consent.

St. George, Hanover-square.—A porch and vestibule in front of No. 30, Curzon-street, St. George, Hanover-square (Mr. H. T. Hare for Mrs. Adair).—Refused.

City of London.†—Oriel windows on the second and third floor levels of premises on the north side of St. Paul's-churchyard, City, and the south side of Paternoster-row (Messrs. Gordon, Lowther, & Gunton for Messrs. D. Nicholson & Co., Limited).—Refused.

Width of Way.

Brixton.†—A two-story warehouse on the north side of a footway leading from Camberwell-green to Camberwell New-road, Camberwell (Mr. A. E. Mullins for Mrs. S. Melhuish).—Consent.

Greenwich.†—A building on the south side of Riverside, Charlton (the Albion Chemical Company).—Consent.

Kensington, South.—Two studios at the rear of Nos. 46 and 47, Campden Hill-square, Notting Hill, with the forecourt boundary or fence at less than the prescribed distance from the centre of Aubrey-road (Messrs. Battam & Co. for Mr. F. T. Battam).—Consent.

Southwark West.—A building in the yard on the eastern side of Belvedere-buildings, Southwark-bridge-road, Southwark (Mr. T. G. Thomas for Messrs. R. and H. Jenner & Sons).—Consent.

Southwark West.—A four story building on the south side of Bennett's-mews, Bennett-street, Southwark (Messrs. J. D. Mathews & Son for Messrs. Cook, Son & Company).—Consent.

Wandsworth.—Rebuilding of the Two Brewers public-house, East-hill, Wandsworth, to abut upon St. Ann's-hill (Mr. K. D. Young for Messrs. Young and Company's Brewery, Limited).—Consent.

Whitechapel.—Re-erection of No. 3, Bell-lane, Wentworth-street, Whitechapel, partly over the site of Coburg-court (Mr. R. A. Jack for Mr. S. Lyon).—Consent.

Hammersmith.—Buildings on the west side of Davisville-road, Hammersmith (Mr. G. Godfrey).—Refused.

Rotherhithe.—A one-story workshop on the west side of Princes-place, St. Mary Church-street, Rotherhithe (Messrs. Witherington & Hogwood for Messrs. G. C. & F. B. Lowe).—Refused.

Rotherhithe.†—A one-story addition to the Ship and Shovel public-house, Maze Pond-terrace, Rotherhithe, to abut also upon Great Maze Pond (Messrs. Newman & Newman for Mr. H. Millson).—Refused.

Woolwich.†—An iron roof over two cable tanks on the east side of Henley-road, North Woolwich (Messrs. W. Whitford & Co. for W. T. Henley's Telegraph Works Company, Limited).—Refused.

Space at Rear.

Chelsea. — A modification of the provisions of Section 41 (1) (vi.) of the London Building Act, 1894, with regard to open spaces about buildings, so far as relates to the proposed erection of two blocks of residential flats on the north side of Cheyne-walk, Chelsea, at the corner of Beaufort-street, with an irregular space at the rear (Messrs. Lethaby & Troup for the Town and Gown Association of Edinburgh).—Consent.

Paddington, South.—A modification of the provisions of Part V. of the London Building Act, 1894, as to the extension above the diagonal line directed to be drawn by Section 41 of that Act, so far as relates to the proposed erection of an additional story to No. 6, Burwood-place, Edgware-road, Paddington (Messrs. E. Harris and Sons for Mr. A. Wagg).—Consent.

Whitechapel.—A modification of the provisions of Section 41 (1) (vi.) of the London Building Act, 1894, with regard to open spaces about buildings, so far as relates to the proposed erection of a four-story house with shop on the ground floor, on the north side of Wentworth-street, Sandy's-row, Whitechapel, next No. 1, Wentworth-street, with an irregular space at the rear (Messrs. J. Hood and Sons for Messrs. D. and M. Cohen).—Consent.

Deviation from Certified Plans.

Strand.—Deviations from the plans certified by the District Surveyor, under Section 43 of the Act, so far as relates to the proposed rebuilding of No. 2, Coventry-street, St. James's, Westminster (Messrs. H. Cooper and Sons for Messrs. Amber & Co.)—Consent.

Strand.—Certain deviations from the plans certified by the District Surveyor under Section 43 of the Act, so far as relates to the proposed re-building of No. 68, St. James's-street, St. James's, Westminster (Mr. C. H. M. Mileham, for Messrs. Chubb & Sons' Lock and Safe Company, Limited).—Consent.

Hampstead.—No order with respect to the application of Mr. A. R. Stenning, for Messrs. J. Barnes & Co., for sanction to certain deviations from the plan certified by the District Surveyor under Section 43 of the Act, so far as relates to the proposed erection of a three-story stable building, with living rooms on the two upper floors, on the south side of Canfield-place, Finchley-road, Hampstead.—Agreed.

St. Pancras, South.—Certain deviations from the plans certified by the District Surveyor under Section 43 of the Act, so far as relates to the proposed rebuilding, with residential flats on the upper floors, of the Apollo public-house, No. 191 Tottenham Court-road, at the corner of Francis-street, on the sites of, Nos. 191 and 192, Tottenham Court-road and No. 19, Francis-street (Mr. C. Fitzroy Doll for Messrs. Ireland & Fitch).—Refused.

Lines of Frontage and Width of Way.

Fulham.—That the application of Mr. T. J. Evans for Mr. T. Davies for an extension of the period within which the erection of one-story shops upon part of the forecourts of Nos. 19, 21, 22, 23, 24, 25, and 26, Effie-road, Walham Green, was required to be completed, be granted.—Agreed.

Hammersmith.—The retention of a greenhouse on part of the forecourt of No. 24, Black Lion-lane, Hammersmith (Mr. J. Stott).—Consent.

Lewisham.†—A four-story addition at the flank of Burton Villa, Sydenham Park-road, Lewisham, to abut upon Sydenham Park (Mr. G. Tolley for Mr. E. C. Christmas).—Consent,

Marylebone, West.—A one-story addition in front of the coach-house at No. 93, Gloucester-mews West, St. Marylebone (Mr. R. G. Hansell for Mr. E. W. Hansell).—Consent.

Bow and Bromley.—A one-story addition upon part of the forecourt of No. 86, Bow-road, Bow (Messrs. G. E. Holman and H. R. Goodrham for the Royal London Friendly Society).—Refused.

St. George-in-the-East.—A building upon the site of Nos. 210 and 212, Commercial-road East, and No. 1, Jane-street, St. George-in-the-East (Mr. H. Moon for the Capital and Counties Banking Company).—Refused.

Projection and Width of Way.

St. George, Hanover-square.—An open iron and glass porch at the entrance to No. 6, Berkeley-street, St. George, Hanover-square (Mr. R. G. Hammond for Mr. Thomson).—Consent.

Projections and Space at Rear.

Marylebone, West.—Bay-windows, porches, loggia, and balconies to two blocks of residential flats on the east side of Maida Vale at the corner of Hall-road, and also the erection of an ornamental turret at the premises to extend above the diagonal line (Messrs. Boehmer & Gibbs for Messrs. G. H. & A. Bywaters).—Refused.

Width of Way and Space at Rear.

Rotherhithe.—The rebuilding of the "Dundee Arms" public-house, No. 61, Artillery-street, Rotherhithe, to abut also upon Church-street and the proposed approach road to the Tower-bridge, at less than the prescribed distance from the centres of Artillery-street and Church-street, and with an open space at the rear (Mr. G. W. Thompson for Messrs. Noakes & Co., Limited).—Consent.

Southwark, West.—An additional story on part of the one-story portion of the "Hope" beerhouse, No. 15, Canvey-street, Zoar-street, Southwark, at the corner of Canvey-street (Mr. J. Hamilton for the New London Brewery Company, Limited).—Consent.

Width of Way and Temporary Buildings.

Hackney, North.†—Retention of wooden enclosures to a stage used in connexion with open air theatrical performances in the club grounds at the rear of the Mildmay Radical Club and Institute, 34, Newington-green, Hackney, at less than the prescribed distance from the centre of Church-path (Mr. R. Manley for the Mildmay Radical Club and Institute).—Consent.

Poplar.—Two temporary iron sheds on the south-east side of Deptford Ferry-road, Millwall, near its junction with West Ferry-road (Messrs. Crickmay & Zimmermann for the Guelph Cask Company).—Consent.

Formation of Streets.

Fulham —That an order be issued to Messrs Boyton, Pegram, & Buckmaster, sanctioning the formation or laying out of four new streets for carriage traffic on the Beaufort House estate, North-end-road, Fulham (for Mr. F. Boyton and Mr. R. Nevill Buckmaster). That the names Sedlescombe-road, Racton-road, Anselm-road (in continuation), and Tamworth-street be approved for the new streets.—Agreed.

Wandsworth.†—That an order be issued to Messrs. Alder & Turrill, sanctioning the formation or laying out of new streets for carriage traffic on the Durnsford estate, Merton-road, Wandsworth, and the widening of a portion of Merton-road in connexion therewith (for the Wimbledon Land Company). That the names Dreyfus-street, Fincham-street, and Mayfair-street be approved for the new streets.—Agreed.

Wandsworth.—That an order be issued to Messrs. Marler & Co., sanctioning the formation or laying-out of two new streets for carriage traffic out of Mitcham-lane and Thrale-road respectively, Streatham, (for Colonel R. J. Aspinall). That the names Penwortham-road and Moyser-street be approved for the new streets.—Agreed.

Buildings for the Supply of Electricity.

Lambeth, North.—An air-compressor house at the Charing Cross and Strand Electricity Supply Corporation's generating station, No. 85, Commercial-road, Lambeth (Mr. W. B. Pinhey).—Consent.

Means of Escape from Top of High Buildings.

Marylebone, West.—Means of escape in case of fire on the sixth story of Abbey Court, No. 47, Abbey-road, St. John's Wood, for the persons dwelling or employed therein (Messrs. Metcalf & Greig for the Mansions Estate Company).—Consent.

Chelsea.—Means of escape in case of fire on the top story of two blocks of residential flats with studios on the roof, on the north side of Cheyne-walk, Chelsea, at the corner of Beaufort-street, for the persons dwelling or employed therein (Messrs. Lethaby & Troup for the Town and Gown Association of Edinburgh).—Consent.

Cubical Extent.

Southwark, West.—A cooperage with cellarage under and a two-story building to be used as a men's dining-room and foremen's office, at the brewery, Park-street, Southwark Bridge-road, such buildings together to exceed in extent 250,000, but not 450,000 cubic ft., and to be used only for the purposes of the trade of a brewer (Mr. G. Hubbard for

Messrs. Barclay, Perkins, & Co., Limited).—Consent.

The recommendations marked † are contrary to the views of the Local Authorities.

ARCHÆOLOGICAL SOCIETIES.

ST. PAUL'S ECCLESIOLOGICAL SOCIETY.—The twenty-first annual Report of this Society shows that seven meetings have been held at the chapter-house, Westminster, during the session. The following papers, among others, have been read:—"Low Side Windows," by Mr. Philip M. Johnston; "The Mural Paintings of Sussex Churches," by Mr. J. Lewis André; "Some of the Northern and Eastern Cathedrals of England, including Durham, Lincoln, Ely, and Peterborough," by Mr. J. Grimshire. An interesting exhibition of objects of ecclesiological interest occupied one evening. The following churches were visited during the summer:—The Catholic Apostolic Church, in Gordon-square; the Dutch Church, in Austin Friars; St. Vedast, Foster-lane, and St. Anne and St. Agnes; Lincoln's Inn Chapel; and Blackmore, Essex. Part IV. of Volume IV. of the Transactions has been issued, containing the following papers:—"The Shrine of Edward the Confessor," by Mr. Edward Bell; "The Work of the Benedictines of Solesmes in the Plainsong Revival," by Mr. H. B. Briggs; "Lincoln's Inn Chapel," by Mr. W. Paley Baildon; "Low Side Windows in Churches," by Mr. Philip M. Johnston; "Notes on a Bristol Manuscript Missal," and "Notes on a Manuscript Sarum Missal in the Bristol Museum," by Mr. E. G. Cuthbert F. Atchley.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The fourth meeting of the session was held on the 17th inst. at the rooms in Sackville-street, Mr. C. H. Compton, vice-president, in the chair. Mr. Cecil Davis read a paper he had prepared upon "Zoology Represented on Monumental Brasses in Gloucestershire," which was illustrated by many rubbings and engravings. The paper dealt with some of the various animals represented in our old monumental brasses, but did not notice those borne as charges on shields. As the mediæval sculptor availed himself largely of the forms of animals in the enrichments of his carvings, whether of gargoyles, capitals, or misereres, &c., in like manner the brass engraver found in the representation of animals a valuable aid to his compositions. Chief amongst the animals represented was, of course, the king of beasts, which, as symbolical of strength and courage, is fitly found supporting the feet of the knight or warrior; but the lion is also found on the brasses of judges, as an emblem of the power they wielded when sitting in their courts. The lion again appears in a winged form as the symbol of St. Mark. Next to the lion the animal most frequently represented is the dog, as the personification of fidelity, which is to be seen on many brasses to ladies. At Dearhurst is an interesting example of a dog, which is shown as a supporter of the feet of Lady Cassey. It is evidently a favourite dog, for beneath is its name, "Terri." The only other known instance was on a brass formerly at Ingham, Norfolk, where the pet's name is recorded, "Jakke." The dogs are often found lying on the ladies' skirts as lap-dogs, and looking up into the faces of their mistresses. A collar of bells, as represented round the neck, is curiously like the bells used for a similar purpose at the present day. The sheep was another animal well represented in Gloucestershire brasses, especially in wool-growing districts of the Cotswolds. They were sometimes associated with a woolpack, as in the case of a wool merchant and his wife at Northleach, *circa* 1485, where each has the right foot resting upon a sheep couchant and the left on a woolpack. Animals and other creatures were found in monumental brasses, forming the "breaks" in the inscriptions bordering the brasses, of which the Fortey brass (*circa*. 1447) was a capital example; in this brass the designer seemed to have copied his examples direct from Nature. An interesting discussion followed the paper, in which Mr. Andrew Oliver, Mr. Gould, Rev. H. J. D. Astley, Mr. Rayson, the chairman, Mr. Williams, and Mr. Patrick took part.

THE CLERGY AND ARTISTS' ASSOCIATION.—We have received a long letter from Mr. E. S. Prior in reference to this Association, but for want of space we are compelled to defer its publication until next week.

BOOKS RECEIVED.

THE PRINCIPLES AND PRACTICE OF MODERN HOUSE CONSTRUCTION. By various writers. Edited by G. Lister Sutcliffe. London: The Gresham Publishing Company. 1899.

A DIGEST OF THE LAW OF EASEMENT. By L. C. Innes. Sixth edition. Stevens & Sons.

PROCEEDINGS OF THE ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS. Vol. XXV. Also index to Vols. I. to XXV. E. & F. N. Spon.

Correspondence.

To the Editor of THE BUILDER.

FIRE-RESISTING FLOORS.

SIR,—Referring to the letter as to the above in your last week's issue, signed "District Surveyor," in which he states that wooden joists are not allowed by the Act, I would point out that Section 74, in requiring, under certain conditions, floors to be constructed of fire-resisting materials, does not aim at a fire-proof floor. And, on turning to the Second Schedule, which deals with materials that are considered fire-resisting, I find, among others, hard woods for beams, posts, doors, and staircases; and concrete when filled in between the joists of floors. The framers of the Act evidently, to my mind, in including these materials in this schedule, and especially in not specifically qualifying the word "joists," had the intention of easing as far as possible the radical changes imposed by the sections requiring the use of fire-resisting materials in the new Act.

The principal use this schedule is put to, both by those who supervise the carrying-out of the Act and by those who build under it, is to ascertain what materials may be used that are not, in the usual acceptance of the term, fire-resisting. The schedule does not and is not intended to enumerate all the actual fire-resisting materials; for instance, concrete is only used in this one connexion, yet a concrete wall is surely fire-resisting.

Therefore, to my mind, while an ordinary wooden floor is not fire-resisting, yet the same floor, when concrete is filled in between the joists, is transformed, to a certain extent, into a fire-resisting floor; and, moreover, this construction complies with the letter and spirit of the Act.

In conclusion, I may say that I do not for one moment advocate a fire-resisting floor on the above principle, and shall be very glad when the Act is altered on this point, together with a good many others that require the same attention.

G. T.

SIR,—I should like to reply to your correspondent "District Surveyor" as to the Building Act and a "fire-resisting floor."

Section 74, truly, requires the floor to be constructed of fire-resisting materials; but when we turn to the Second Schedule we find under the head of materials deemed to be fire-resisting "concrete, &c., when used for filling in between joists of floor."

Also, in the addition to the schedule made in April, 1899, coke breeze concrete is so deemed when such concrete is used for filling in between the joists of floor, and is filled in to the depth of at least 5 in.

On my asking the Council for an explanation as to whether wooden joists or iron joists were intended, the reply came—"No particular kind of joist is referred to, and it may therefore be taken to refer to joists either of fir or iron."

That such a floor would resist a fire longer than if no concrete were filled between the joists is clear; but *how* long the British Fire Prevention Committee intend shortly to ascertain.

ELLIS MARSLAND.

DECAY IN NEW CHURCHES.

SIR,—A writer in a contemporary has called public attention to the recurrence of cases of churches which, though under fifty years old, are so decayed as to need restoration, and he says this state of things is a reproach to us.

As the indictment does not seem exclusively intended for the architect, it is but fair to admit its truth as a general proposition, and, whatever fault may lie with us, to see to it that only suitable material and sound workmanship be allowed in future work. But I believe the greater fault lies with the client, whether an individual or building committee, who insists on a great show for an inadequate outlay, so that, instead of a small building, or part of a building, so far as funds allow, being constructed—noble, worthy of a temple of the Deity, and "for duration built"—a large, weak-walled, thin-roofed, gimcrack, but highly-varnished structure is reared, whose soft stone dressings are decayed at the end of the second decade of their existence, and whose roof lets in wind and wet, till it wants great resolution on the part of worshippers to sit through a service within its walls.

Unfortunately, many such churches are known to most of us, and ambition and parsimony on the organiser's part, and a desire to show a grand effect on paper in competition, must, I fear, share the dishonour and reproach in some degree between them. Still, however, in part justification, it may be said that instructions to cut down a needful estimate are frequent, and not every practitioner can afford to accept the alternative of losing the commission if he refuses so to do. E. W. HUDSON, A.R.I.B.A.

"ANOTHER STRANGE COMPETITION."

SIR,—The letter of "Competitor" in your issue of the 13th inst. was the first intimation I had of the result of the Billericay competition, of which I was another of the unfortunate victims.

Surely we can recover our expenses, as "Another Victim" suggests; and I shall be quite willing to pay my small share towards employing a solicitor, if the other competitors will do the same.

The Billericay Council no doubt think they have done a smart thing in obtaining five or six opinions on improving a building without paying anything for them, but surely such sharp practice amounts in the abstract to obtaining goods under false pretences. FAIR PLAY.

SIR,—Perhaps the enclosed letter may prove of interest to the correspondents in your last issue.

HENRY DRUERY,
"Billericay Rural District Council,
Brentwood.
January 17, 1900.

DISTRICT HOSPITAL.

DEAR SIR,—I am in receipt of your letter of the 15th inst., and in reply thereto beg to inform you that the Council regret they were unable to accept your suggestions as to the proposed additions to their hospital. A local competitor has been instructed to prepare plans from particulars supplied by the Medical Officer. Your drawings are being returned.—Yours faithfully,

C. EDGAR LEWIS.

Henry Druery, Esq.,
2, Old Queen-street,
Westminster, S.W."

The Student's Column.

DETAILS OF STRUCTURAL IRON AND STEEL.

4.—MANUFACTURE OF WROUGHT IRON.

MALLEABLE iron, or wrought iron, as it is more generally called, exemplifies a nearer approach of the metal to a chemically pure condition than is evidenced by any of the substances spoken of as iron or steel. In its more perfect commercial forms wrought iron contains not less than 99 per cent. of pure iron, and its strength and ductility depend directly upon the degree of purity attained.

Wrought iron is made either by the elimination of carbon and various foreign ingredients from pig iron, or by direct reduction of iron ore. All processes of the first class involve the selective oxidation of impurities, although variations of their details are particularly marked. Up to 1784 the conversion of cast into wrought iron was performed by charcoal finery, of which the best known form was the Walloon process. Although superseded long ago by the introduction of "puddling," a few isolated examples of charcoal hearths survived until a comparatively recent date. The characteristics of iron produced by charcoal finery were fineness of grain, combined with remarkable strength and ductility, but the small quantity of metal treated at one time, and the relatively large area of the hearth, made the cost of production unnecessarily high.

Puddling as formerly practised, and described as "dry-puddling," involved two distinct operations—(*a*) treatment in the refinery hearth, where the percentage of carbon and silicon was reduced; and (*b*) puddling, by means of which the metal, being gradually freed from impurities, "came to nature," and was raked together into a pasty mass, termed a "ball." Dry-puddling has now been almost entirely superseded by the more modern process, which, in the picturesque language of the furnace-man, is described as "pig-boiling," the term being suggested by the effervescence of carbon monoxide at a certain stage of the operation.

In puddling proper, or pig-boiling, no use is made of the refinery hearth. The crude metal is placed directly in puddling-forges, which are constructed in varied forms, but all of them represent modifications of the original appliance invented by Cort in 1784. Fig. 8 is a sectional diagram, by the aid of which we may follow the general nature of the operations conducted in pig-boiling. The bed (a) is of cast iron, kept cool by circulation of air at the under surface; on the top a "fettling" of slag, covered with a thin layer of hematite ore, forms a hollowed surface, upon which the pig

iron is placed by means of the *working door* (b). A fire in the compartment (c) is charged through the *stoking door* (d), and provides gaseous fuel, which passes through the converting chamber to the chimney shaft. When the metal is fluid it is stirred or "rabbled" by implements put in at the *working door* (b), so that the hematite may be incorporated. Slag containing iron oxide is added as a flux for the silica resulting from oxidation of silicon in the pig iron. Lime is sometimes introduced with a similar object, and chloride of sodium is also used for removing sulphur and phosphorus. As the iron becomes purer, temperature is raised proportionately with increase of the melting point, and the charge is "rabbled" towards the outer parts of the bed. After further raking, the metal is rolled into balls, which are taken from the furnace at a welding heat. Mechanical rabbles and revolving cylindrical furnaces have been devised to dispense with hand labour, but such appliances are not entirely satisfactory. When removed from the furnace, a puddle-ball is permeated with slag, the bulk of which is extracted by "shingling" under a hammer, or in a squeezing-machine. In this way a compact "bloom" of wrought iron is produced, which is passed through the roughing-rolls of a rolling-mill, and then through the finishing-rolls, whence it emerges as a "puddle-bar," and such bars are cut into lengths by powerful shears. Their transformation into various forms of iron used in constructional work is effected by placing a number of the bars one on top of another to make a "pile," which is reheated in a reverberatory furnace, and afterwards rolled into bars, plates, and rails of any desired section by rolls with suitably-shaped grooves.

Much depends upon the manner in which piling is performed in the rolling-mill. As far as possible, the pieces should be of uniform thickness, so that the heat may be equally diffused, and that pressure may be transmitted through the whole mass of metal. Many different modes of piling are adopted, according to the form of section required, and to the preference of the manufacturer. Sketches of some of these are given under fig. 9. Want of care in rolling seriously affects the quality of joists; the webs and flanges may be buckled or otherwise damaged by unequal working, and the flanges are sometimes defective owing to the imperfect filling of spaces between the rolls.

We have now traced the evolution of puddled wrought iron from pig iron to finished forms of the material, and it will be observed that four distinct stages are successively reached:—

1. Production of the "ball," being wrought iron permeated with fused slag.
2. Squeezing or hammering the "ball" into a "bloom."
3. Rolling the "bloom" into "puddle-bars."
4. Rolling "puddle-bars" into mercantile forms of iron.

Other methods are available for the manufacture of wrought iron, which can be sufficiently explained by the selection of typical examples. In the Bessemer process, liquid metal from one or more blast furnaces is transferred to a suitable vessel or "converter," shown in two positions in fig. 10. The vessel is formed of steel plates lined with refractory material and mounted on trunnions (c). It is turned down when the charge (e) is inserted, so that the fireclay tuyères (b) will not be filled with iron. The converter is made red hot, and the fuel is turned out before the charge is run in. On being turned up, air under pressure is blown through the melted iron from the tuyères, which are fed from the tuyère-boxes (a). Oxygen in the air combines with carbon and silicon of the pig iron, and incidentally produces heat enough to maintain the metal in a state of fusion until it is reduced to the malleable condition, when it is run into "ingots" of homogeneous constitution, which are rolled into mercantile forms. As originally worked, the Bessemer process was only applicable with success to pig irons free from sulphur and phosphorus, hence the term "Bessemer iron" has been used to indicate crude metal possessing this qualification.

In the Bloomery process wrought iron is made directly from the ore by one form or another of the "Catalan forge," and is obtained in blooms, hence establishments where the process is practised are called "bloomeries." The method is still used in America and elsewhere, and is only suitable for ores naturally rich and pure.

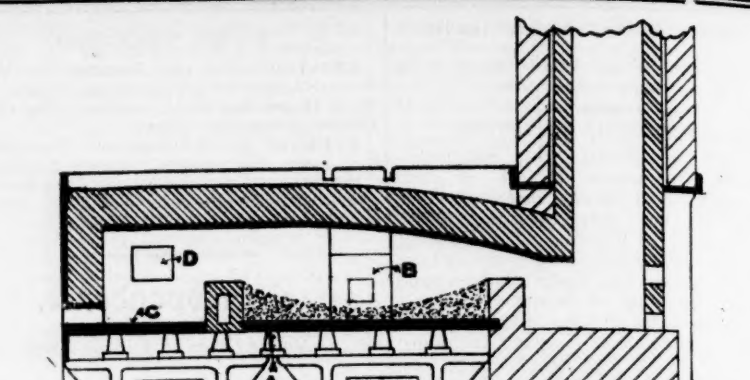

Fig. 8.—Puddling Forge.

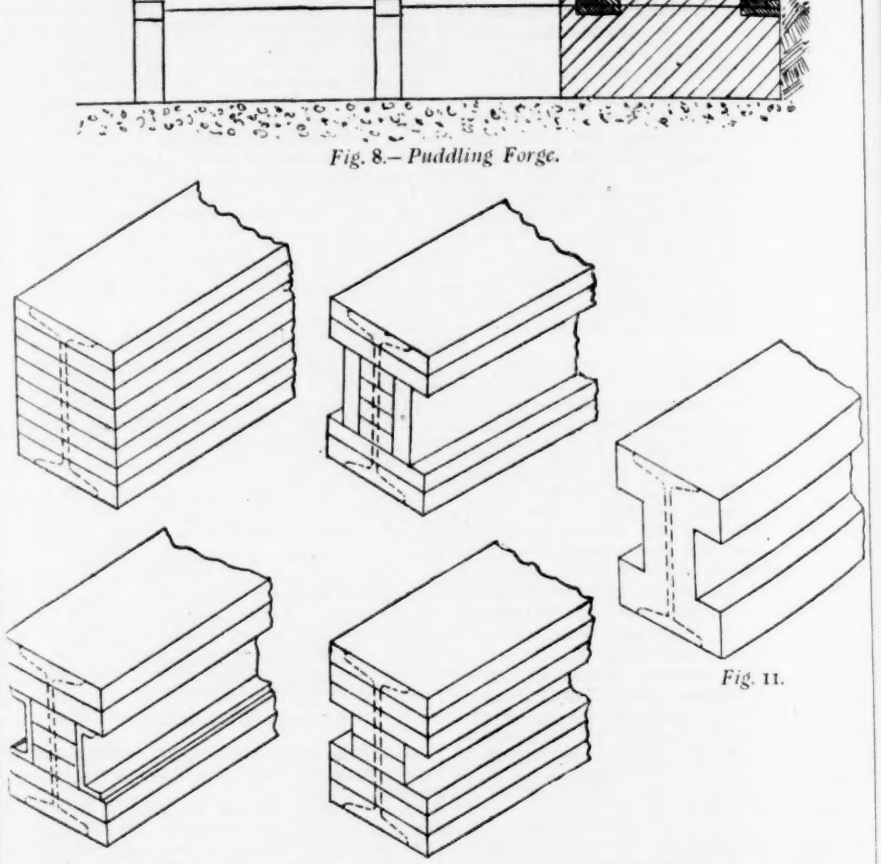

Fig. 11.

Fig. 9.—Sections of "Piling" for the Rolling-mill.

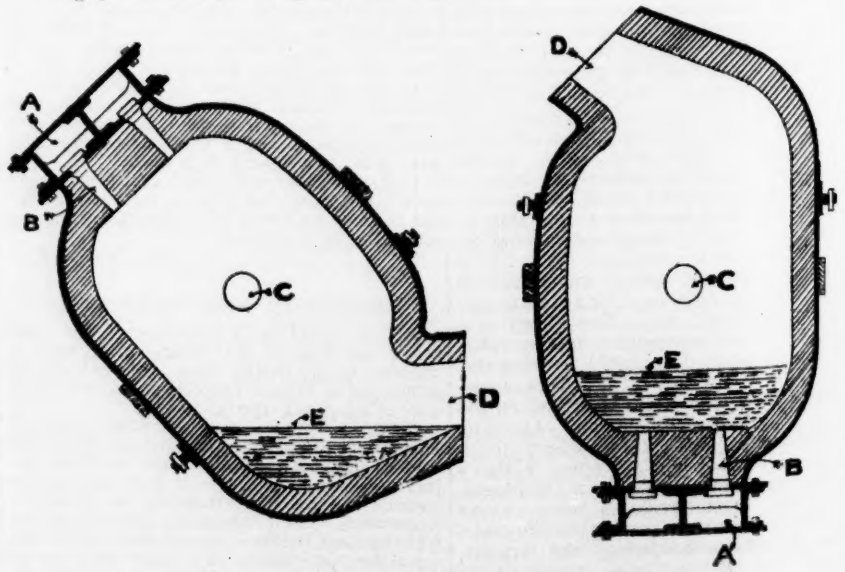

Fig. 10.—Bessemer Converter.

The Siemens "precipitation" process is one by which wrought iron can be made directly from the ore at one operation, and its essential features are (1) the reduction of ore in a regenerative furnace; and (2) the separation of wrought iron from the crude metal whilst still in a state of fusion. Purified iron appears in the form of a pasty ball, surrounded by fluid slag, and the ball subjected to treatment similar to that followed in the case of balls produced by puddling.

Two distinct classes of wrought iron are produced by the processes which have been mentioned. Methods of purification not causing complete fusion yield metal which, after squeezing and rolling, consists of parallel fibres and laminæ, more or less permeated with slag. Such iron is fibrous and non-homogeneous

in structure, and the strength of its manufactured forms depends very much upon the extent to which the peculiarities of the metal are recognised by the ironworker. Other methods, involving absolute fusion, produce homogeneous ingots of uniform quality, into the composition of which slag enters to a very limited degree.

Manufacture of Steel.—Steel is the third and last compound of iron for consideration, and the term is applied to metals differing so widely one from another in strength and other qualities, that some confusion exists as to what may really be meant by the word "steel." Until recent times steel, made by cementation from wrought iron, was a substance having well-defined characteristics, but since the development of modern processes a new material has made its appearance, which, although called steel, does not possess the distinctive property of tempering, and the proportion of contained carbon ranges from a percentage equal to that in cementation steel down to the percentage existing in ordinary wrought iron. It is impossible, in fact, to determine where wrought iron ends or where steel begins. In Germany it is becoming usual to describe iron and steel produced by puddling as *weld metal*, and to distinguish the product of processes where fusion takes place as *ingot metal*. Thus two parallel series are established, and these have been arranged, as shown in Table IV., by M. Greiner, of Seraing :—

Table IV.—Parallel Series of Irons and Steels.

Carbon (per-centage).	Iron Series.	Steel Series.
0·0 to 0·15	Ordinary iron.	Extra soft steel.
0·15 „ 0·45	Granular iron.	Soft steel.
0·45 „ 0·55	Puddled steel.	Medium steel.
0·55 „ 1·50	Cemented steel.	Hard steel.

This classification is not altogether satisfactory, because it seems to mix up irons and steels, and also because it does not recognise the property of tempering as a mark of difference between the two metals. For architectural purposes, tempered steel is only incidentally used, and we have chiefly to do with "mild steel," a material which has practically superseded wrought iron so far as structural work is concerned.

Blister, or cemented steel, is made by imbedding bars of wrought iron in charcoal, and heating them at high temperature for some days. Carbon is absorbed and the surface of each bar is converted into steel, but the interior part is not fully transformed. The term *blister steel* originated from the appearance of the surface of the metal.

Shear, or tool steel, is made by heating piles of blister steel bars and rolling them at a welding heat, so that uniformity of structure and constitution may be secured.

Cast, or crucible steel is made by melting blister steel with a relatively small quantity of carbon. This quality is chiefly used in the manufacture of cutting tools. Other grades of cast steel sometimes called "homogeneous metal" are made by melting wrought iron with carbon.

Puddled steel is made in the puddling forge by arresting the process when sufficient carbon has been removed to secure the conversion of pig iron into steel, and before the metal reaches the condition of wrought iron. The ball of steel taken from the furnace is finished in the ordinary manner.

Bessemer steel is made by restoring carbon to Bessemer wrought iron by the addition of either spiegel-eisen or ferro-manganese. If the Bessemer converter is lined with "ganister," a material composed largely of free silica, and therefore capable of acting as an acid at high temperatures, only the purest qualities of pig iron may be used. By the employment of a basic lining of dolomite, the Bessemer process, as modified by Thomas and Gilchrist, is rendered suitable for the treatment of phosphoric pig iron. Steel produced is run into ingots, which are hammered and rolled like blooms of puddled iron. The success of the Bessemer process was largely due to Mushet, whose patent rights lapsed through neglect in the third year, and whose name is now either unknown or nearly forgotten.

Open hearth processes include the Siemens and the Siemens-Martin methods, and the hearth may be *acid* or *basic*, as preferred. In the Siemens process, pig iron and ore are used, whilst in the Siemens-Martin process a mixture of pig and scrap iron is employed. In either case the raw material is first reduced to the malleable state and the proportion of carbon is regulated by the addition of spiegel-eisen.

Varieties of special steel are made for engineering requirements, and such kinds include in their composition manganese, nickel, aluminium, tungsten, chromium, or any metal which may be chosen. Compressed steel is made by the application of pressure to the fluid metal, and the resulting steel is of superior density and tenacity, besides being freed from blowholes. Cold-rolled steel is shaped roughly when hot, and finished after cooling. In this way the metal is rendered harder and more elastic, but plasticity is diminished.

Steel is formed into bars, rails, and beams in the rolling mill, but at a lower temperature than that necessary for puddled iron. Girders are rolled from rectangular "billets," but for sections of more than 12 in. in depth the billets are shaped in the roughing rolls to the form shown in fig. 11.

The operation of rolling necessitates from twelve to eighteen passes through the rolls according to the size of the girder. Owing to this prolonged treatment and to the comparatively low temperature observed, both stiffness and strength are materially increased.

OBITUARY.

MR. WILLIAM WHITE.—We regret to have to record the death of this well-known architect, which took place suddenly on the 22nd inst. at 24, Gayton-road (not his own house, which is at 30A, Wimpole-street). Mr. White was a Fellow of the Institute of British Architects and a Fellow of the Society of Antiquaries; and he was an architect of a very marked individuality in his opinions and practice. With a very strong feeling for the artistic element in architecture, he was also a man with a good deal of exceptional practical knowledge and experience, and a way of his own of doing things. When there was a discussion on any point in architectural work it was not unusual for us to receive an original and trenchant letter from Mr. White for publication, in which he often hit the nail on the head, and at all events showed that he was familiar with the question under discussion. At the meetings of the Institute and of the Architectural Association Mr. White, when he spoke, spoke badly and did not do himself justice; but there was always a kernel of solid matter in his remarks. His works were numerous, though he carried out we believe, no building of the first importance. One of the most noteworthy was the house which he built for Mr. Dick in Ireland, about which many years ago he read a paper at the Institute, and which was built under no definite contract, additions and alterations being made, as fancy prompted, during the progress of the work; unfortunately the financial result was not very satisfactory. Another prominent work of his was St. Saviour's, Aberdeen Park, Highbury, which was a novelty at the time, being built entirely of brick within and without, and covered with Staffordshire tiles; the stonework being limited to window tracery, capitals, corbels, and such details. Among Mr. White's other works were the churches of All Saints', Kennington Park; St. Matthew's, Battersea; St. Mary's, and St. Michael's, in the same district; St. Mark's, Hanwell; St. Mark's, Battersea-rise; St. Peter's, Plough-lane, Battersea; St. Stephen's, Battersea Bridge-road; Masters' houses at Eton and at Shrewsbury College; the Bishop's Palace, Wakefield; Phillack Parish Church, Cornwall, and the screen; Steeple at Ashbourne, Derbyshire (restored); Mission Hall, Pentonville; Memorial Tower and Lych-gate, All Saints', Bourton; design for window to be executed in Leigh Church; Public Steam Laundry with lodge and stables, Hertford, &c.

SAN FRANCISCO.—A new hall of justice is being constructed on the corner of Kearny and Washington streets, San Francisco. Messrs. Shea & Shea are the architects, and the whole contract for the erection was let to Messrs. Bateman Brothers under their supervision.

FREE ST. STEPHEN'S CHURCH, EDINBURGH.—A new church for the congregation of St. Stephen's Free Church is to be erected at the east corner of Comely Bank-road and Fettes-avenue. Competitive designs were some time back asked for from a number of Edinburgh and Glasgow architects, and as a result that by Messrs. J. N. Scott & A Lorne Campbell, of Edinburgh, was adopted. In addition to the church proper there will be a large hall, with retiring and lavatory accommodation attached, while provision is also made for the ultimate erection of a manse. Designed in the later Gothic style, the church has its entrance frontage towards Comely Bank-road, and at the same time presents an elevation to Fettes-avenue, which at some future time will have a square tower. The plan of the church consists of a nave with side aisles, transepts, and choir. The tower is situated at the angle formed by the west transept and the nave, and the hall immediately behind the choir. The church, which is designed to seat 750 persons, is expected to cost somewhat over 7,000*l.*

GENERAL BUILDING NEWS.

MISSION HALL, WARLEY, ESSEX.—The mission hall which has been built in Junction-road for the parish of Christ Church, Warley, was dedicated on the 10th inst. The hall is of white brick, with a corrugated iron roof, and will accommodate 350 persons. The floor is of wood blocks, and chairs are provided for the seating. Mr. W. White Rolfe, of Brentwood, was the architect.

BOARD SCHOOL FOR SPARKBROOK, BIRMINGHAM.—A new Board school has been erected in Conway-road, Sparkbrook. The architects are Messrs. Martin & Martin, of Birmingham. The school, which will accommodate 680 boys and girls, and 360 infants, has been built upon lines similar to the new school in Yardley-road. All the rooms are on the ground floor, and in addition to them there are cloak-rooms and a large hall for the boys and girls, and for the infants, in which drills can be practised. The ventilation is on the plenum system. The erection of the building has been entrusted to Messrs. W. Whitehead & Sons. The estimated cost is 14,981*l.*

TECHNICAL SCHOOL, DEWSBURY.—A new wing which has been added to the Dewsbury and District Technical School was opened on the 10th inst. The addition contains six class-rooms, two physical laboratories, and new rooms for the dyeing and weaving departments, including a new loom room. The architect was Mr. J. Lane Fox, of Dewsbury.

THE BUILDING TRADE OF HULL.—Had it not been for the unfortunate building trades dispute which prevailed during practically the whole of the 1899 season, the year, so far as Hull is concerned, would, it is stated, have been one of very great activity. Men have been very scarce all the year, and full employment could have been found for much larger numbers. At the same time, the smaller builders have felt the effect of the dispute very slightly, and the running up of residential houses has proceeded with remarkable briskness throughout the whole of the year. No less that 2,617 plans for houses were passed by the Works Committee during 1899, and, in addition, there were approved 319 plans for miscellaneous buildings. The greater number of houses have been erected in the north and west districts, the extremes of which are being more and more developed as residential suburbs year by year. There are now signs of great activity in this respect in the east, due, no doubt, to the pending construction of the new dock. Several new streets have already been laid out, and there will be plenty of work to the east of the river Hull during the current year. Last year the erection of several very large buildings was carried on. Among these were Rank's new mills in Great Union-street, the Eagle Mills in Cleveland-street, the Swan Mills in Wilmington, the Constitutional Club in Carr-lane, a new wing to the Imperial Hotel, a Board School in Newland-avenue, Hammond's new premises in Osborne-street, the Fish-street Memorial Congregational Church in Prince's-avenue, the North-Eastern Railway's extensive cleaning sheds and coaling places in Argyle-street and new hydraulic works in English-street (now in course of construction), and the Art Gallery in Albion-street. Other works now in progress are the New Pacific Club in High-street, the Ocean and Accident Insurance Company's new offices in Lowgate, and the National Telephone Company's new premises in Mytongate.

RAILWAY STATION, STIRLING.—A new station is to be built at Stirling, on the site of the present station. The plans for the work have been prepared by Mr. Thomas M. Barr, Superintendent Engineer, Northern Section, Caledonian Railway.

NEW BUILDINGS, LEEDS.—The Leeds Estates Company, Limited, recently forwarded plans to the chief Building Inspector of the city (Mr. Towers) for the erection of a café immediately above Wood-street, Briggate. The design shows a building surmounted by a lantern tower, the summit of which is to be about 40 ft. above the ground floor. The dining-room will be some 66 ft. long by 60 ft. wide, with a balcony. Mr. Frank Matcham has prepared the plans.—Two new Board schools are about to be built—one in Wintoun-street, the other in Lovell-road—plans of which have already been submitted to the Corporation.—On the site of the old East Parade Chapel a block of buildings is to be erected for the North British and Mercantile Assurance Company.

THEATRE FOR MOTHERWELL, LANARKSHIRE.—At Motherwell Dean of Guild Court on the 8th inst. plans were passed for the erection of a theatre in Windmillhill-street, Motherwell. The structure will comprise an auditorium, pit, dress circle, and gallery. The building will be lighted throughout by electricity. Seating accommodation will be provided for 1,500, and the house, which is to be known as the "New Century Theatre," will cost upwards of 5,000*l.* Mr. Alex. Cullen is the architect.

WORKING-CLASS DWELLINGS IN SALFORD.—Mr. H. P. Boulnois, Local Government Board Inspector, held an inquiry at the Salford Town Hall on the 11th inst., into the application by the Salford Corporation for sanction to borrow 111,400*l.* for the erection of labouring-class dwellings, shops, and a public hall on the site of the infantry barracks in Regent-road. There was no opposition to the application. The Town Clerk (Mr. L. C. Evans), in explaining the scheme, said that the Corporation had

adopted plans for the erection of the dwellings' which, generally speaking, would be cottage dwellings. Fronting Regent-road, however, which was one of the main thoroughfares of the borough, it was proposed to erect shops as part of the dwellings. It was further intended to build a public hall on a portion of the site. The basement would be a place for children to play in, and the upper floor would be used for entertainments and so forth. It was also intended to provide a recreation ground to be utilised by the dwellers in the cottages. The Council had agreed to sell to Earl Egerton of Tatton about 991 square yards of the land, and on this particular plot Lord Egerton intended to build a church.—Mr. Henry Lord, Borough Architect, afterwards produced the plans of the new buildings, and explained them in detail. He said it was proposed to erect 346 cottage dwellings, divided into three classes. There were also to be thirty-four shops fronting Regent-road, and there would be dwelling-houses over these shops.

PARISH INSTITUTE, TICEHURST, SUSSEX.—A parish institute has been erected at Ticehurst from the designs of Mr. Aston Webb. It consists of reading-room, games-room, billiard-room, lavatories, a large entertainment hall, with stage, green-room, and lavatories, and a caretaker's residence of six rooms, with outhouses. The building is of red brick, with dressings of Bath stone. The doors of the three main entrances are of carved oak, the woodwork of the interior being chiefly of Oregon pine. Gas and electric bells are laid on, and the whole building is warmed with hot water coils.

NEW OPERA HOUSE, HARROGATE.—The new Grand Opera House at Harrogate has just been opened. It has been erected in a central position within three minutes of the station, and has an extensive frontage to Chapel-street and Cheltenham-parade. The architect was Mr. F. A. Tugwell, of London and Scarborough. The building is of red brick, with stone dressings. The block also contains eight shops. The principal entrance to the Opera House is in Chapel-street. The holding capacity of the house is given as 1,300, the seats being divided as follows:—Private boxes, orchestra stalls, dress circle, pit stalls, pit balcony, and gallery. A fireproof curtain separates the stage from the auditorium. The whole of the staircases, lobbies, and corridors are of stone, and each part of the house has a separate entrance and exit. The heating is by hot water. The general contractor is Mr. Hy. Abbott; joiner's work, Mr. Rudd; plasterers, Messrs. Fortune & Calverley; electric lighting, Mr. Falshaw; seats, decorations, &c., Messrs. A. R. Dean, Limited, London and Birmingham; general decorations, Broadbank & Sons; ironwork, Messrs. Wright & Sons, Hull; slating, Mr. Reyner; heating, Messrs. Oldroyd, Leeds; fire hydrants and Grinnel sprinklers, Messrs. Dowson, Taylor, & Co., Leeds.

SANITARY AND ENGINEERING NEWS.

PETERHEAD HARBOUR WORKS.—A Report with reference to the progress of the Peterhead Harbour Works during the year ended March 31, 1899, has been issued as a Parliamentary paper. Messrs. Coode, Son, & Matthews, the engineers-in-chief, report that during the year the breakwater was extended 112½ lineal ft. The following are the chief items of work executed in connexion with the extension:—Rubble deposited in foundation mound, 13,639 tons; levelling surface of mound for foundations and superstructure, 765 superficial yards; concrete in mass, 234 cubic yards; ditto, in block work, 852 cubic yards; ditto, block work in apron, 599 cubic yards; granite ashlar in face work, 21,323 cubic ft.; ditto, other than blocks, 420 cubic ft.; ditto, in copings, 413 cubic ft.; ditto, in pitching, 2,020 superficial ft. In consequence of the lowering of the level of the superstructure foundations by 13 ft. the removal of 1,071 tons of surplus rubble was rendered necessary. Serious delays were occasioned during the year owing to the impossibility of obtaining Portland cement in sufficient quantity and on account of shortness of water.

RUABON DRAINAGE AND SEWAGE DISPOSAL WORKS.—At the invitation of Sir Watkin Williams Wynn, Chairman of the Ruabon Parish Council, a public inspection was made a short time since of the recently completed sewage works of Ruabon, when Mr. E. B. Marten, M.Inst.C.E., of Stourbridge, Engineer of the scheme, gave an account of the drainage of the district, and described the method of sewage treatment adopted, which consists of chemical precipitation in tanks and artificial filters combined with land filtration. The filters are two in number, having a total area of 160 sq. yards, being formed of layers of gravel, sand, and polarite, upon one of the methods of the International Purification Syndicate. The Ruabon filters are worked on the automatic inter-aërating system, by which the tank effluent is automatically discharged on to the filters in properly regulated quantities, leaving an interval between each discharge for the aëration of the filters. The filtered effluent is distributed over the irrigation area by means of pipe carriers laid under ground, with chambers at suitable points, filled with sluices for delivery of the water to the surface. The area of the outfall site is 5½ acres.

STAINED GLASS AND DECORATION.

MARBLE DECORATION AT THE "CRITERION."—Marble halls, as seen in English restaurants, are not generally works of taste, though the tendency latterly is towards better workmanship and less tawdry effects. Noticeable among the best of public entertainment rooms is the new buffet and smoke-room at the "Criterion," Piccadilly. The work done there is both elaborate and beautiful, two conditions often not found together. Messrs Burke & Co. are responsible for both the conception and execution of the decoration. The buffet is a long room, with the smoking-room at the far end, and light is only attainable at either end; this necessitated the use of light-coloured marbles and a great deal of iridescent and opalescent material in the ceiling. The long sides of the room are a series of arches deeply recessed on coupled columns, standing on a plinth or dado of marble from Tennessee; the marble of the wall linings, arches, and shafts of the columns is from Vermont, and it is the first time that these marbles from the United States have been used in Great Britain. That from Vermont has exceedingly beautiful wavy lines that have been used with the effect of giving width and continuity to the design. The shafts are polygonal in plan, the joints of the marble being the occasion of a pleasant line of gold mosaic slightly recessed. Over the arches are plaques of lapis lazuli and malachite. The ceiling is in gold mosaic, mother-of-pearl being largely introduced.

WINDOW, WESLEYAN CHAPEL, WITNEY.—The large west window of this chapel has been filled with stained glass by Messrs. Camm, of Smethwick. The subject of the window is "Christ blessing little children."

FOREIGN.

FRANCE.—M. Jean Paul Laurens has been elected President of the Société des Artistes Français for 1900. M. Detaille has been elected president of the jury on painting, and the architectural committee of the same society for 1900, 1901, and 1902 is composed of MM. Pascal, Loviot, Normand, Vaudremer, Courtois-Suffit, Scellier de Gisors, Chancel, Daumet, Boeswillwald, and Formigé——M. Cormon, the painter, has been commissioned to paint two ceilings and a cupola for the Palais des Colonies Françaises, built at the summit of the Trocadero Amphitheatre. One of the ceilings, which is to decorate the first hall, represents the four quarters of the globe; the second ceiling, in the central gallery, has for its subject, "France carrying to her colonies the benefits of civilisation," and the Cupola in the rear of the palace represents the Flora and Fauna of the colonies.——A commemorative marble tablet has just been placed on the façade of the house in which Puvis de Chavannes died.——The Municipality of Grenoble has just opened a competition for the building of the Church of St. Joseph.——The jury commissioned to judge the competition opened by the town of Douai for the building of a hippodrome, have awarded the first prize to M. Ledoux, architect, of Ghent; the second prize to M. Charles Cavé, architect, of Cambrai; and the third prize to M. G. Robert, architect, of Paris.——A new bridge is shortly to be built over the Rhone between Avignon and Villeneuve-les-Avignon, in place of the one there now.——The International Congress of "l'Art Public" is to be held in Paris in August. It will be the occasion for an interesting collection of drawings, models, photographs, and inlay work. The meetings will be held in the new building which has been built on the site of the Saint-Germain market for the use of the service of examinations of the Paris Municipality.

SALT LAKE CITY, UTAH.—The new St. Mary's Cathedral is being erected at the corner of B and East Brigham-street, Salt Lake City. The structure is 96 ft. wide at the transepts by 180 ft. deep, and will accommodate 1,200 worshippers. The plan is cruciform, the main part consisting of a wide and lofty nave with narrow aisles on each side. The principal entrance is from Brigham-street, approached by a series of steps and terraces. The two towers will be 200 ft. high. The interior fittings will be very elaborate, the organ-loft will be on the south side of the church, and the main floor part of the eastern tower forms the baptistry. The architect is Mr. C. M. Neuhausen, assisted by Mr. J. S. Birch.

MISCELLANEOUS.

APPOINTMENTS OF SANITARY INSPECTORS.—The Local Government Board has sanctioned the appointments or re-appointments of Sanitary Inspectors as follows:—Mr. T. D. Young in Islington, Miss A. Tattersall in Poplar, Mr. J. I. Lonnon in St. Pancras, Mr. W. Brown in St. Pancras, Mr. G. T. Billing in Holborn.

ARCHITECTURAL PHOTOGRAPHY.—In an article on this subject in *Photography* for January 18, Mr. H. W. Bennett says:—"The importance of the lighting in regard to the effectiveness of the picture is appreciated by most workers, but there is another aspect which does not appear to be so recognised, and that is its effect on the character of the architecture. Frequently a difference in the time of day will materially affect the nature of the lighting in this respect. The direction in which the strongest light enters windows may entirely change the character of the work; certain portions may be emphasised or brought into relief, while others of lesser importance may be relatively subdued, and it will well repay any worker to study his subject under the varying aspects due to this cause before deciding to expose his plate." The writer goes on to say that "insufficient foreground is a weak point in many architectural photographs" but in regard to this point photographers in general do not understand what an architect wants a photograph for. The notion of photographers is always to produce a "view" with the building in the centre of it. What the architect wants is not a view, but the detail of the building as large and clear as possible.

STREET IMPROVEMENTS, FELIXSTOWE.—Colonel C. H. Luard, R.E., an Inspector to the Local Government Board, held an inquiry at the Town Hall, Felixstowe, on the 10th inst., with regard to an application by the Urban District Council for sanction to borrow 4,670*l.* for works of private street improvements. Mr. F. B. Jennings (the Clerk) and Mr. G. S. Horton (the Surveyor) explained to the Inspector the engineering details in connexion with the making-up of the six roads—Leopold-road, Stanley-road, Tomline-road, Princes-road, Wolsey-terrace, Queen's-road, and a passageway near the Ordnance.

MIDLAND MASTER BUILDERS' FEDERATION.—The annual meeting of the Midland Centre of the National Building Trades Employers Federation, which embraces the counties of Nottingham, Derby, Leicester, Lincoln, Northampton, Huntingdon, Rutland Salop, Stafford, Warwick, Worcestershire, &c., was held on the 16th inst. at the Grand Hotel, Birmingham. Alderman Bowen (Birmingham) presided, and amongst those present were Messrs. J. Dickinson, J. V. Porter and A. Brown (Derby). The report of the executive board congratulated the members on the continued prosperity of the building trade in the Midlands. The Chairman, in moving the adoption of the report, stated that, although the Midland centre was young in comparison with the other centres of the National Federation, the work of the past year would have beneficial effects in the future, and as the work of organisation progressed those benefits would be more evident. In the case of trade disputes the object of the Federation was to secure settlement by conciliatory means, if possible, and so prevent those disastrous dislocations which had in the past frequently disorganised the trade. Mr. J. Bowden (North Staffordshire) seconded the motion, which was supported by Mr. Sapcote (Birmingham), Mr. Brown (Derby), and carried unanimously. On the proposition of the Chairman, seconded by Mr. C. H. Barnsley (Birmingham), Mr. Jas. Wright (Nottingham), was elected President for the ensuing year. The following officers were also elected:—Vice-Presidents, Messrs. A. Chambers (Leicester), Mr. John J. Moffat (Birmingham); treasurer, H. Willcock (Wolverhampton); auditors, Sharman Wood (Leicester), and J. V. Porter (Derby). On the motion of Mr. Albert S. Smith, seconded by Mr. Dallow, votes of thanks were passed to the President, officers, and executive, for their services during the past year.

PAINTING IN ENAMEL.—Professor Herkomer lectured on Monday at Burlington House on "Painting in Enamel." It must be understood, he said, that he would treat only of painting in enamel, not of *champlevé* and *cloisonné*. And of painting he could speak only of his own methods, for he knew very little indeed of the methods of other workers, many of whom tried to cast an unnecessary mystery over the practice of the art. The foundation of a painting in enamel was copper, and the professor explained first of all the qualities of that metal, why workers in enamel hammer their plates before working on them, and why the old enamellers used plates convex in shape. For his part, he did not believe in such convex plates. It seemed to him essential that for pictorial purposes the plate should be as nearly flat as possible, and most of his later enamels were practically flat. The lecturer then explained the use of the wooden blocks on the table. The copper plates were cleaned on them before commencing to paint with the aid of an engraver's flannel "dolly" and emery powder. The old plan was to use acid, but he did not like it. The absolute cleanliness of the copper was, however, essential; the least fraction of grit or finger-marks might ruin your plate. The next thing was to cover the plate with the first flux; and the lecturer gave elaborate directions for preparing the enamel powder by grinding it in an agate mortar and subsequently washing it many times to get rid of the milky impurities which, if allowed to remain, would make the colour muddy and dirty. The method of applying the enamel powder to the back and front of the plates was then described. The back was not so important, but the spreading of the coating on the front required great care. The plate was now ready for drying and firing, and the uses of the muffle, of the high stove, and of an ingenious screen of glass and asbestos designed by the lecturer, were now made clear. The time occupied in firing had to be judged from feeling and experience—science could not measure it. Through the asbestos and glass screen you could peep at

your work now and again, and when done the plate should have a certain brassy, alimony look. When cool, the plate was ready for the tracing of the design on it with carbon paper—a design which should have been made beforehand with the greatest possible care. The Professor then described the gradual modelling up of a figure from a dark ground, showing examples of enamels at each stage of firing, and explaining his reasons for departing at a certain point from the recognised methods of flesh painting in enamel. "To every painter," said the lecturer in conclusion, "comes a disappointing moment in the middle period of his career—a moment when he begins to feel the limitations of his art. A change of some sort is wanted, and at this time painting in enamel will serve a man if it suits him. It is emphatically work for an artist's middle period.—*Morning Post.*

INTERESTING DISCOVERY AT EAST HAM.—Mr. John E. Skipsey, organist at the parish church of St. Mary Magdalene, East Ham, has made some interesting discoveries of mural decorations, believed to be eleventh century work, almost synchronous with the building of the edifice. Beneath a casing of plaster figures have been found of Satan, the eyes directed scowlingly upon full-sized figures of our Redeemer and the Virgin with infant. The scene depicted is believed to be the Temptation in the Wilderness. Over a pointed arch is a painting of Goliath, David, and Saul, which apparently has been chipped with chisel and hammer.—*Essex County Chronicle.*

NOTTINGHAM MASTER BUILDERS' ASSOCIATION.—The annual general meeting of this Association was held on Friday last week, at the Association's offices (Bentinck Buildings), the chair being taken by Mr. Jas. Wright (the retiring President). The accounts for the past year were laid before the members, and considered satisfactory, they showing a balance in hand, in spite of the increased expenses of the year through the plasterers' lock-out and the subsequent strike. The report of the Honorary Secretary (Mr. F. Hodson), summarising the work of the Association for 1899, was then presented and adopted. The following officers were elected for this year:—President, Mr. W. Edgar; Vice-President, Mr. H. Vickers; Hon. Treasurer, Mr. W. J. Woodsend; Hon. Secretary, Mr. T. Barlow. It was decided to have the annual dinner next month as usual.

FIRE AT NEWCASTLE.—A great fire occurred on Tuesday in Newcastle-on-Tyne, destroying the Central Exchange Art Gallery, one of the works of Richard Grainger. A year or two ago the gallery was reconstructed as to its interior, and contained the Vaudeville Theatre, a restaurant, a café, and a suite of club rooms, all of which were newly decorated. The institution was in the heart of the most important block of business property in the city, being surrounded on three sides by large shops. The premises were leased to Messrs. H. Engel & Co., but the Vaudeville Theatre was closed. The whole block, with the exception of a few of the club rooms facing Grainger-street, was gutted.

CAPITAL AND LABOUR.

BUILDING TRADE DISPUTE AT SCARBOROUGH.—Another dispute has arisen between the master builders and the operative plasterers of Scarborough, as to the rules which are to apply to the conditions under which the masters and men work. On the occasion of the lock-out of plasterers throughout the country in March last, the Scarborough masters declined to join on the ground that they had no grievance, and were not affected, and because the majority of Union plasterers in the town were not employed by members of the Masters' Association. A settlement of that dispute was arrived at in May, but as the Scarborough masters had not joined in the lock-out they contended they were not bound by the settlement. At this time, owing to the Hull dispute, a lock-out was ordered of all trades by the Yorkshire Federation of Builders, and Scarborough masters joined in the lock-out which included 25 per cent. of plasterers. The result was that the whole body of Union men came out. Eventually an agreement was arrived at, and they returned to work. The plasterers contend that the rules which applied to their trade were rendered null and void, and that new rules should be drawn up in which the London agreement should be incorporated. This the masters declined to do, alleging that the agreements with reference to the demarcation of work and that with reference to the number of apprentices were not feasible in Scarborough. The Union men accordingly struck work on the 22nd inst. About twenty-five men are involved.

LEGAL.

CASE UNDER THE 1894 LONDON BUILDING ACT:

NEGLECT TO GIVE NOTICE.

On the 16th inst., at Lambeth Police-court, Mr H. Line appeared before Mr. Hopkins to answer two summonses taken out by Mr. Bernard Dicksee, District Surveyor for East Newington, &c., one for penalties for neglecting to give notice as required by Section 145, and the other for doing work affecting the construction of a public building without the approval of the District Surveyor. Evidence was given that the defendant as builder had commenced and practically completed work to the Surrey-square Board School without notice. The work comprised the construction of a new boiler-house in the basement, the underpinning of an external wall, and the construction of a new flue carried up through the whole height of the school building; as this work was being done to a public building it was by Section 78 entirely subject to the control of the District Surveyor, who had had no opportunity, owing to defendant's neglect, of inspecting the work during progress.

Mr. Hopkins fined defendant 20s. and costs on each summons.

PAINTING INSIDE GUTTERS:

ALLEGED BREACH OF CONTRACT.

IN the City of London Court, on Thursday last week, before Mr. G. Pitt-Lewis, Q.C., Deputy-Judge, and a jury, the case of the Estates and Investment Corporation, Limited, which was partly heard a month ago, and reported at the time in the columns of the *Builder*, was disposed of. The action was brought by the plaintiffs, of 8, Great Winchester-street, E.C., who sought to recover the sum of 13*l.* 8s. 2d. as damages for breach of contract. The case for the plaintiffs was that they employed the defendants to paint forty-five houses at their property at Bush Hill-lane. The work was done so badly that it was found necessary to do it again. They contracted to paint the outside of the houses, and that was to include gutters, stackpipes, &c. The plaintiffs alleged that the defendants had not painted the insides of the gutters and stackpipes, and they contended that the custom of the building trade required them to do so. The plaintiffs had had to paint the parts which had been left, and they now asked the defendants to be held liable for the expenditure which had had to be incurred. The defendants, too, had damaged a number of slates while doing the work. The defendants, on the other hand, denied that they had done anything of the sort. It was never contemplated when the contract was made that the insides of the gutters and stack-pipes would have to be painted. There was no custom prevailing in the building trade which could require them to do so.

Witnesses were called on both sides in support of the respective views, and the jury found for the defendants.

ACTION FOR INJURIES.

AT the Clerkenwell County Court, on Friday last week, before his Honour Judge Edge, James Charles Healey, bricklayer, claimed of Messrs. Patman & Fotheringham, Limited, under the Employers' Liability Act, for 30*l.* damages for personal injuries.

Mr. Chester Jones was counsel for the plaintiff, and Mr. McIntyre represented the defendants.

Counsel for the plaintiff stated that plaintiff was working for the defendants on July 26 last at a building which the defendants were erecting in Bishop's-court, Chancery-lane. Plaintiff was working on a scaffolding which was thrown out of the window, and it became necessary for him to go round to the front of the building, the scaffolding extending along the edge of the building. The plaintiff had no means of knowing the situation of the scaffolding, and found that it did not go round the front. He therefore knew of that danger and escaped it; but he fell into a danger which he had no means of anticipating. One of the poles gave way and he suffered a very bad fall. The poles ought to have been securely fastened. He was subsequently taken to the hospital and then removed home in a cab. Plaintiff was in bed eight days and was under medical attendance for about a month. He was still suffering from the effects of the injuries to his right hand, and could not return to work until August 28.

In cross-examination, the plaintiff admitted that he had not previously examined the scaffolding. The scaffold to which he fell was more than 5 ft. below. A man, named Munro, who was also injured had since died.

For the defence, Frederick Charles Simpkins, the general foreman on the building, said he had examined the scaffolding in question before it was used, and in his opinion it was perfectly secure. Workmen ought not to jump from one scaffold to another. Plaintiff fell from one scaffold to a platform.

The Judge said he should imagine that it was common sense that men would not jump from one scaffold to another.

The witness said the plaintiff had no need to be where the accident took place. He admitted that he did not see the accident, but the plaintiff had no business on the higher scaffold at all.

Mr. Migotti, general manager to the defendants, said he saw the plaintiff soon after the accident, and he said he was getting on all right. He told the plaintiff that he had no business to jump from one scaffold to another.

Mr. McIntyre submitted that there was no evidence to show that there was any defect in the scaffold.

The Judge said he was satisfied that the scaffold was properly constructed. The plaintiff was no doubt stepping from the higher scaffold to the lower one when this accident happened, and the verdict would therefore be for the defendants, though he thought the plaintiff was entitled to half his wages for three weeks.

ACTION AGAINST ARCHITECTS.

ON the 22nd inst., Mr. Justice Phillimore concluded the hearing of the case of Solomon *v.* Palgrave & Co., an action by the plaintiff, Mr. J. D. Solomon, formerly lessee of the Theatre Royal, Kilburn, against Messrs. Palgrave & Co., architects, to recover £105 which he alleged the defendants had agreed to pay in the event of their failing to complete the purchase of the plaintiff's leasehold interest in the Theatre Royal, Kilburn, within six months from December 25, 1898, and which they had failed to do. The defendants denied liability, and counterclaimed for specific performance and damages.

Mr. Justice Phillimore, in giving judgment, said that the effect of the contract contained in the letter of December 23, 1898, was that the plaintiff gave the defendants the right within three months of saying they would purchase the premises in question. If they agreed within that time to do so, then they were to submit plans to the County Council for approval. When they had got that approval, the purchasers were to pay a deposit of 5 per cent., and then there was to be an agreement in the usual form for the sale of the vendor's interest in the property. He was clearly of opinion that the plaintiff was entitled to the 105*l.*, and certain costs connected with that part of the case would be his in any event. The defendants, however, said that sums were due to them from the plaintiff in excess of 105*l.* He came to the conclusion that time was not of the essence of the contract, and also that there was no wilful default or repudiation by the defendants which would allow the plaintiff to fix a time within which the contract was to be performed and therefore that the defendants had a right to claim to go on with the contract. That being the case, the defendants were entitled to damages if they could show what loss they had suffered. In the result his lordship gave judgment for the defendants on the counter claim for 315*l.* 10s. with costs; the plaintiff to have 10*l.* for the costs to which he was entitled, and the 105*l.* in Court to be paid out to the defendants.

IS A SHOW-CASE A BUILDING?

AT the North London Police-court, on the 17th inst., Mr. Thompson Fisher, photographer, of Mare-street, Hackney, was summoned before Mr. Fordham for erecting a building in the forecourt of his house beyond the general line of frontage without the consent in writing of the London County Council.

Mr. Chilvers appeared for the County Council; Mr. C. V. Young defended.

Mr. Chilvers said that the defendant had erected a show-case in his front garden for the display of his photographs without the consent of the Council as required by the London Building Act of 1894. This structure was 13 ft. long, 8 ft. high, and 3 ft. wide, and was made of wood covered with zinc on a brick foundation. The front was glazed, and at the back were panelled doors. It was lighted by gas.

Evidence was given to show that no consent for the erection of the show-case had been given, and that it stood 8 ft. 9 in. beyond the general line of frontage.

Mr. Young contended that the London Building Act was designed for the regulation of the habitations of men, and he argued that, as this was not a habitable structure, it would be exempt from the operation of the Act. He quoted cases to show that a builder's office which was 10 ft. high, and a wood and iron bungalow of four rooms, erected as an advertisement and for sale, had been held not to be buildings within the meaning of the Act.

Mr. Fordham: In the first case the office was on wheels; in the second, the bungalow was never meant for habitation or use at the place where it was erected.

Mr. Young: This structure is not intended for habitation.

Mr. Fordham: It is intended for use—for the display of the defendant's photographs.

Mr. Young went on to say that the present show-case took the place of a similar one which had been there since 1891, and which had never been interfered with. Moreover, the County Council had proceeded against another photographer in the same street in 1894 for erecting a similar show-case, and had failed. As they did not appeal, the defendant thought he would be quite safe in taking away his old show-case and renewing it.

Mr. Fordham said at present he was of opinion that this show-case was a structure, and that the consent of the Council was required for its erection; but still he thought it would be very hard on the defendant to have to pull down a structure which really did no harm to any one. He adjourned the case to consider his decision, and in the meantime he hoped that the defendant would come to some arrangement with the Council.

POINT UNDER THE WORKMEN'S COMPENSATION ACT, 1897.

THE case of Haddock *v.* Humphreys came before the Court of Appeal, composed of Lords Justices A. L. Smith, Rigby, and Collins, on the 20th inst., on the appeal of the applicant from an award of the Judge of the Lancashire County Court sitting at Liverpool, in an arbitration under the Workmen's Compensation Act, 1897.

It appeared that the applicant was the widow of a workman killed by an accident in the course of his employment, the employers being Messrs. W. & T. Humphreys, who were carters. At the time the accident occurred, the deceased man was engaged in the work of removing a log of timber from a pile of logs and loading it on one of the respondents' carts, the respondents having arranged with a firm of builders who had bought the log, to remove it from the place where it was stored. The place where the accident happened was a timber-yard, distant 150 yards from the water of the Canada Dock at Bootle. Alongside the water was a large space called the timber quay, which stretched back from the water a distance of 150 yards, and beyond this, running parallel with the water, was a cart road, which was used by the public. On the further side of this road was a line of offices, to each of which was attached a yard. These offices and yards were leased by the Mersey Docks and Harbour Board to certain timber merchants, and it was in one of these yards that the timber in question was stored. The area comprising these offices and yards was enclosed by a wall and gates, and on the further side of this area ran a highway called Regent's-road, and beyond this again there were similar offices and yards. The only question in the case was whether the place where the timber was stored was a wharf, so as to come, by virtue of Section 23 of the Factory and Workshop Act, 1895, within the definition of "factory" contained in Section 7 of the Workmen's Compensation Act.

At the conclusion of the arguments of counsel the Court, by a majority (Lord Justice Rigby dissenting), held that the place was not a wharf, and dismissed the appeal.

Mr. Blackwood Wright appeared for the appellant, and Mr. Joseph Walton, Q.C., and Mr. Leslie Scott for the respondents.

IMPORTANT ACTION AGAINST AN ARCHITECT.

MR. JUSTICE MATHEW, in the Queen's Bench Division, on the 23rd inst. gave judgment in the case of Restell *v.* Nye, an action brought by the executors of the plaintiff, who had died since the action was commenced, against the defendant, an architect, to recover money alleged to have been received by the defendant to the plaintiff's use, and also damages for the defendant's negligence.

It appeared that the defendant was employed by the plaintiff as architect in connexion with the building of a bungalow in Sussex. From the letters which had passed between the parties it appeared that the defendant was to be paid by the plaintiff for "plans, specifications, and supervision of works" 5 per cent. upon the amount of the expenditure, travelling and out-of-pocket expenses to be charged extra. In accepting the defendant's offer in these terms, the plaintiff wrote that the charge was to be an inclusive charge covering everything. The defendant entered upon the work and prepared a specification, on which tenders were obtained, and included therein a provision that surveyor's charges for bill of quantities should be 2½ per cent. on the amount of the estimate, and for drawings, &c., 10*l.* 10*s.* The defendant himself prepared a bill of quantities, and obtained a tender from a firm of builders at Brighton for the erection of the bungalow for the price of 1,790*l.* This tender was accepted, and a contract was signed by the plaintiff, which provided that the price should be paid by instalments upon the defendant's certificates, and that his final certificate should be conclusive evidence that the builders were entitled to receive payment of the final balance. When the work was completed, the plaintiff paid the contract price, together with the cost of certain extras on the defendant's certificates. The defendant was paid by the builders 2½ per cent. on the contract price for taking out the quantities, and the 10*l.* 10*s.* for the drawings. The plaintiff's case was that the receipt of these payments by the defendant was a breach of the defendant's term of employment, and was alternatively a secret profit made by the defendant in the course of his employment. The defendant, on the other hand, contended that the ordinary course of business had been followed, and that the plaintiff was fully aware that the cost of taking out the quantities was not included in the defendant's charges for acting as architect to the work. The plaintiff also claimed damages for alleged negligence on the part of the defendant in having omitted to check the builders' accounts with due skill and diligence, and for certifying for sums improperly passed. The defendant, however denied these allegations.

His Lordship, in giving judgment, said that the defendant had alleged that the terms of his employment by the plaintiff were that his charges were only to cover the ordinary work of an architect, apart from the work of taking out quantities. The usual course of business was that the builder employed some one to take out the quantities. The builder affixed his own price to the quantities, and he added to the amount of his tender the fee of the quantity surveyor, and in the event of the tender being accepted that fee was included in the first certificate given by the architect. It was not usual in London for the builder to employ the architect to take out quantities, but it was said that in the country that course was not considered objectionable, and was permissible. In the present case the defendant acted as quantity surveyor, and the amount of his fee was included in the sum for which the defendant, as architect, gave his first certificate. Subsequently the plaintiff discovered what had been done, and he claimed the benefit of the payment on the ground that by the terms of the employment the defendant's charge was to be an inclusive one. The defendant, on the other hand, said that the agreement between them was that he should be confined to his ordinary duties as architect, and that the builder might, if he had chosen, have employed any one else to take out the quantities, which was a necessary thing to be done. His Lordship thought that the agreement between the parties did not cover the cost of taking out the quantities, but he felt constrained to say that he did not think the defendant had acted as an honourable man, as he had concealed from the plaintiff the fact that he was making this arrangement. With regard to the other part of the case, the damages were claimed on the ground that the defendant had been negligent in issuing his final certificate. On this part of the case the defendant was sued for negligence only; there was no imputation of fraud. The defendant's answer to this was that he had relied on the word of the builder, but his Lordship was satisfied that the defendant had not held the scales impartially, and had been guilty of negligence, which had benefited the builder at the expense of the plaintiff. He was clearly of opinion, however, that damages were not recoverable on this part of the case, having regard to the authorities. The principle of law applicable to the case was that where two men employed a third to settle a dispute they were bound by what he decided. The parties in the present case were supposed to have satisfied themselves as to the third person's skill and care, and they were not allowed to say, after his decision had been given, that he had acted negligently or with want of skill. There must be judgment for the defendant, but without costs.

Mr. Reginald Bray, Q.C., and Mr. E. Morton appeared for the plaintiff; and Mr. Boxall and Sir Lennox Napier for the defendant.

ARCHITECT'S CONDITIONAL FEES.

AT Brompton County Court, on Tuesday, before Judge Stonor, Mr. Ernest Avern, architect, 13, Tyrawly-road, Walham Green, London, W., sought to recover 22*l.* 10*s.* from Mr. Joseph Codrington, builder, 29, Seagrave-road, Fulham, S.W., the claim being for professional charges for making and supplying plans, tracings, &c. Both plaintiff and defendant are members of the Fulham Vestry.

Mr. F. J. Maw, solicitor, appeared on behalf of the plaintiff, and Mr. Scatliff, solicitor, defended.

The plaintiff stated that in October, 1897, he received instructions from the defendant to prepare sketch-plans for five houses to be erected at Romford, Essex. The sketch-plans having been made, and approved by the defendant, the latter instructed him (plaintiff) to get out completed plans. These also were prepared and approved, and the defendant further requested him to make specifications, with a view to getting tenders for the erection of the houses. Subsequently, however, the defendant decided to have the work carried out by a Mr. Love, a builder. This involved alterations in the specifications, which alterations plaintiff made. His charges were according to the usual scale, but the defendant refused to pay more than a portion of them.

Cross-examined: It was not a fact that he had offered to prepare the plans, &c., and get 4*l.* or 5*l.* as a preliminary fee, and a further 30*l.* if the buildings were erected. He understood that the defendant was going to borrow money for the job, and pay Mr. Love certain amounts as the work proceeded. He was not asked to prepare tracings for the Local Authorities, but it was always necessary for an architect to do so. He was not an A.R.I.B.A.; nevertheless he considered that he was entitled to the usual charges made in the profession.

Mr. Codrington, the defendant, stated that when the plaintiff was asked what his charges would be for getting out the plans, &c., he replied, "Oh, I will do them cheap—say 4*l.* or 5*l.*" It was also agreed that Mr. Avern was to have 30*l.* in the event of the job going on. If, however, the matter fell through—as had been the case—the plaintiff was to get only the 4*l.* or 5*l.* He was prepared to pay a fair amount for the plans, but the tracings were made for the other builder, Mr. Love, and as to the tracings for the Local Authorities—well, he (defendant) gave no instructions for them to be prepared. The five houses were to be in two lots, and the arrangement was that plaintiff should have two separate sums of 4*l.* or 5*l.* each. He therefore considered that Mr. Avern was only entitled, at most, to 10*l.*, but he had already paid plaintiff 17*l.* odd. He had made the extra allowance, however, on account of plaintiff having a good deal of trouble over his work.

Cross-examined: He had never suggested that Mr. Avern should look to the other builder, Mr. Love, for his charges for the tracings, &c.

The Judge: I understand the defendant to say that he paid the plaintiff more than he was legally obliged to pay.

Solicitor for the defendant: Yes, sir; but at the same time we deny liability to pay beyond the amount which we admit.

The Judge: I find for the defendant. I think he has paid sufficient.

Solicitor for the plaintiff: Do I understand your Honour to hold that the 17*l.* odd is sufficient?

The Judge: I hold that anything above 10*l.* sufficient.

WHAT IS "AN ACCIDENT"?

AT the Clerkenwell County Court on Tuesday the case of William Andrews, Islington, *v.* W. J. Collins, Highgate, was heard. This was an arbitration under the Workmen's Compensation Act, 1897, as to the amount of compensation payable to Andrews in respect of personal injury caused by an accident in the course of his employment.

The respondent pleaded that no accident happened, the plaintiff being injured by being knocked off the scaffold by another workman, who was prosecuted and punished.

Mr. Duckworth was counsel for the respondent.

Mr. Gill represented the applicant, and said the main question was whether what happened amounted to an accident within the Act. Mr. Collins was employed under a contract to build a house or houses at Muswell Hill, and for the purpose of superintending that work he had in his employment the applicant Andrews, who was in the receipt of a wage of 3*l.* a week. He had to superintend the care of the building and stores and the necessary materials used, and in pursuance of that duty he had occasion to think that the scaffolder was not dealing properly with the rope. He spoke to the man Purser about it, and he denied it. The latter was engaged in fixing some further scaffolding, and he went up to Andrews and struck him a blow which took him so completely by surprise that he lost his balance and fell off the scaffold, from 30 ft. to 35 ft., and he was very seriously injured. He was under treatment for some time.

Mr. Duckworth said Purser was employed by the sub-contractor, and they had paid 27*l.*, nine weeks at 3*l.* a week, and 5*l.* to a subscription list.

Considerable legal argument followed as to the meaning of the word "accident"; and the Judge said he must hold that this did not come within the Act, not being an accident that could be foreseen.

He gave judgment for the respondent, but would give leave to appeal and stay execution.

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

20,226.—SINKS: *T. W. Twyford.*—A quarter-circular partition and a cross partition divide the body of the sink into three parts, whereof one is provided with a tube-shaped discharge-valve and overflow-pipe, to be lifted from its seat by the turning of a spindle, on which is a cam that engages with a similar cam at the tube's top; the two other parts are fitted with a draining-board and a strainer respectively.

20,247.—WORKMEN'S TIME CHECKING APPARATUS: *F. A. Whitehead.*—The workman depresses his own particular key and thereby causes it to operate a spring punch with strip attached, the punched-out pieces being collected in a box; bell-crank levers, which are retained in either one of two positions by a plate-spring, are also acted upon by the key, and at their ends carry a signal plate, which, when the key is pressed downwards, is passed in front of a window in front of the man's number; the feed-roller of the strip is moved by hand or by clockwork, and the strip is ruled cross-wise for the times and lengthwise for the workmen.

20,283.—SLAG PAVING-BLOCKS, &C.: *C. Brand.*—The casting moulds are supported by a turntable, a "head" of slag being obviated by means of an inclined face which guides the slag from the hopper into an opening. One end and the near side of the mould are hinged to the other end. When they are closed the bottom is lifted, whilst its lugs, which hold the sides of the mould, keep it closed. A catch at the end of the mould locks the bottom.

20,332.—WATER-CLOSET SEATS: *S. A. des Usines du Pied Selle.*—The seat is hinged on to a fixed board at its back, and the board is clamped to the flushing-horn and its cone with half-rounded rings which hang from bolts.

20,406.—JOINERS' CRAMPS: *F. Long.*—The cramp comprises two pieces that are drawn together by four arms—of the latter, two are pivotted to lugs upon the stem or fixed part and two to lugs upon a sliding bar which is retained in its position by a pin

that runs in a slot in the bar and by a projection that engages in a slot in the stem. The sliding-bar is adjusted either by a pinion and rack or by pulling its screwed end; it is fixed by turning its collar so that the end of the screw on the collar will leave a slot in the screwed end and take a place between the threads; the two pieces carry lugs, and are secured to their respective arms by a hook, a loop, and a web in each instance.

20,428.—SASH FASTENINGS: *E. Johnstone & E. S. Ross.*—A plate with its two wings form a frame in which the bolt slides, and a spring moves a pawl which is pivotted between the wings for release of the pawl; in order to draw back the bolt a knob that slides upon its stem is pressed down, but the pawl's engagement in a notch locks the bolt when it is shot. The bolt's bevelled nose serves to force the sashes into the closed position as it enters a keeper upon the upper sash.

20,430.—ACETYLENE LAMPS: *G. Dillberg.* — A cylinder provided with a perforated bottom-plate and an open-work shelf for the calcium carbide is hung upon an outer chamber, and is closed with a stopper fitted with a gas outlet which has a cock and a burner; in operation, water is free to pass from below into the cylinder, and when production exceeds demand the generated gas dispels water from the carbide, the lower portion of the cylinder being large enough to contain any after-production of gas; if the gas by any chance escapes into the outer chamber it is carried off through a hole that is covered with wire gauze, which prevents any flame from passing backwards.

20,489.—LADDERS: *F. J. Pilcher.*—The invention lies in rendering accommodation ladders reversible, by which means the risers when the ladder is in one position become treads when the ladder is turned over; the change is effected by pivotting the bottom step, and fixing it parallel to either the tread or the riser next adjacent by pins that pass through holes in the side frames of the ladder.

20,491.—WINDOWS: *W. McGill.*—The sash cords are fastened to rabbetted sliding stiles to which are pivotted the lower ends of the rabbetted sash stiles, a latch or pivotted catch passing through a slotted plate and engaging with a rounded projection fastens together the sliding and the sash stiles at their upper ends; when the sash is turned up into the frame the stiles are drawn together by means of a wedge-shaped projection upon the pivot pin that enters into a keyhole in the socket plate and presses against the plate's inclined face.

20,496.—ELECTRICITY INSULATORS: *J. Taylor & W. Taylor.*—The main conductor and a binding-wire lie in two transverse slots and a vertical connecting slot of the insulator, which, further, is cut away in two dove-tail grooves for the insertion and the taking away of a locking-slide; the arrangement can be used in a manifold shape upon one insulator, its lower part being of the ordinary form and having a rubber sleeve inside the inner shed, with a loose sleeve of metal to prevent breakage.

20,510.—GUIDING ROPES, CHAINS, &C., FOR WINDING: *Parke & Lacy Company.*—The guide pulley which delivers the rope vertically to the winding-drum is mounted upon a weighted frame which is drawn along by a chain that winds around a small side-drum driven with gearing attached to the main shaft. The winding-drum is made in the shape of a conical frustum if long ropes are to be used.

20,534A. — GAS STOVES AND BURNERS: *J. McCartney.*—Into the burner's channel is introduced the pierced nozzle of the supply pipe, and the channel is fashioned with a lower extension to be closed with a damper, so that when the fire is first lighted the air supply can be kept under control. The mixing chamber, being in the shape of a cylinder, carries a deflecting hood upon its middle standard. The stove is described as especially applicable to water-heaters or water-distilling apparatus.

20,538.—FLOOR COVERINGS: *W. L. Allcroft.*—A flexible material is composed of single or built-up veneers or pieces of wood, which are affixed with glue or cement on to both the sides of a canvas, felt, or similar fabric.

20,586.—WEATHER-TIGHT JOINT FOR WINDOWS, DOORS, HATCHES, &C.: *J. Hamilton.*—For making a weather-tight joint between the frame and a hinged sash or similar flap is employed a flexible tube, which is either expanded with fluid pressure or inflated with air, fits into a recess cut in the frame, and is provided with an inlet valve; a lever that bears against a splayed plate, or a screw, secures the hinged flap or frame; the tube is protected with a casing of non-inflammable material.

20,607.—FLUSHING APPARATUS: *A. V. de Murat.*—Radial partitions, spreading from a common centre, divide the tipping-tank into four triangular compartments, whereof the uppermost one becomes filled with water until a certain height is reached, whereupon the tank tilts over and brings a second compartment into place to be filled in its turn. By fitting a radial tube, closed at its end, and containing a rolling weight, at each side of the tank, premature operation is guarded against; or the tank may be mounted eccentrically in order that the empty tank's centre of mass will always be under the axis of its suspension.

20,637.—GLAZING FOR ROOFS: *A. S. Douglas.*—Flanges of beaded rails or bulb-shaped astragals carry the sheets of glass which are fastened with lead, zinc, or similar caps; spring-clips may be pressed down over the caps which may have curved or flat flanges, and gutters, fashioned of metal strips that clip the astragal's bottom flange or bead serve to carry away water; in another form drainage channels are formed in the astragals, their central webs being grooved for the mid-ribs of the metal caps.

MEETINGS.

FRIDAY, JANUARY 26.

Architectural Association.—Mr. W. R. Lethaby on "Cast Iron." 7.30 p.m.

Institution of Mechanical Engineers. — Fifty-third annual general meeting. Mr. W. Schönheyder on "Water Meters of the Present Day; with Special Reference to Small Flows and Waste in Dribbles." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. John Castell-Evans, F.I.C., on "The Atmosphere; Pressure and Composition." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. C. B. Fox on "The Simplon Tunnel." 8 p.m.

Glasgow and West of Scotland Technical College (Architectural Craftsmen's Society).—Mr. D. Skinner on "Builders' Lifting Appliances." 8 p.m.

SATURDAY, JANUARY 27.

Institution of Junior Engineers.—Fifteenth Anniversary Dinner, at the Westminster Palace Hotel, the President, the Hon. Charles A. Parsons, F.R.S., in the chair. 6.30 p.m.

St. Paul's Ecclesiological Society.—Annual Meeting at the Chapter House. 2.30 p.m. Members are invited to attend service at the Cathedral at 4 o'clock after the meeting.

People's Palace Architectural Society.—Visit to the new railway, Mile End-road. 2.30 p.m.

Dundee Institute of Architecture.—Mr. R. S. Douglas on "Greek and Gothic Abstraction from Natural Forms: a Comparison." With limelight illustrations. 7.30 p.m.

MONDAY, JANUARY 29.

Royal Academy.—Lectures on Architecture by Professor Aitchison, R.A., "Progress in Architecture." 4 p.m.

London Institution.—Mr. Walter Crane on "The Elements of Linear Expression." Illustrated. 5 p.m.

Surveyors' Institution.—Adjourned discussion on Mr. John Nisbet's paper on "Forest Management, with Suggestions for the Economic Treatment of Woodlands in the British Isles." 8 p.m.

Society of Arts (Cantor Lectures).—Mr Bennett H. Brough on "The Nature and Yield of Metalliferous Deposits."—II. 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. E. F. Willoughby on "Elementary Statistics. 8 p.m.

Institution of Junior Engineers.—Visit to the Operative Department of the Royal Mint. 2 p.m.

TUESDAY, JANUARY 30.

Society of Arts (Applied Art Section).—Mr. Cyril Davenport on "Niello Work." 8 p.m.

Institution of Civil Engineers.—Mr. R. Runeberg on "Steamers for Winter Navigation and Ice Breaking." 8 p.m.

WEDNESDAY, JANUARY 31.

Society of Arts.—Sir Martin Conway, M.A., on "The Undeveloped Resources of the Bolivian Andes." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. Castell-Evans, F.I.C., on "Air and Ventilation; Combustion and Respiration." 8 p.m.

Northern Architectural Association.—An evening of Notes, with limelight illustrations, by Mr. J. T. Cackett. 7.30 p.m.

THURSDAY, FEBRUARY 1.

Royal Academy.—Lectures on Architecture, by Professor Aitchison, R.A. "Progress in Architecture."—II. 4 p.m.

Civil and Mechanical Engineers' Society.—Mr. F. H. Hummel on "Graphical Solutions of Certain Problems in Engineering." 8 p.m.

FRIDAY, FEBRUARY 2.

Architectural Association (Discussion Section).—Mr. G. M. Nicholson, P.A.S.I., on "Opening up Land for Building Purposes." 7 p.m.

Institution of Junior Engineers (Westminster Palace Hotel).—Mr. H. G. Cotsworth on "Arc Lamps and Arc Lighting." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. Castell-Evans, F.I.C., on "Water: Composition, Pollution, and Purification." 8 p.m.

Institution of Civil Engineers.—Students' visit to the electrical works of the London United Tramways, Limited. Assemble at the works, 88, High-road, Chiswick. 2.30 p.m.

SATURDAY, FEBRUARY 3.

British Institute of Certified Carpenters (Carpenters' Hall).—6 p.m.

SOME RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

January 11.—By C. C. & T. MOORE.

Whitechapel.—59 and 60, High-st. (one fourth share), c., e.r. 321*l.* 8*s.*	£1,400
Victoria Pk.—13, Cadogan-ter., u.t. 54 yrs., g.r. 6*l.* 6*s.*, e.r. 40*l.*	325
Stratford.—10 and 12, Howard's-rd., u.t. 60 yrs., g.r. 6*l.*, r. 60*l.*	625
Old Ford.—13A, 14A, 15 to 21, Maverton-rd., u.t. 59½ yrs., g.r. 31*l.* 10*s.*	1,840
10 to 14, Clay Hall-rd., u.t. 47 yrs., g.r. 12*l.* 10*s.*	£580
Whitechapel.—18 and 19, Tenter-st. South, f., r. 75*l.*	1,115
Mile End.—84, Grafton-st., u.t. 27 yrs., g.r. 3*l.*, r. 24*l.*	300
Camden Town.—58, Camden-sq., u.t. 44½ yrs., g.r. 10*l.*, e.r. 80*l.*	750

By NEWBON, EDWARDS, & SHEPHARD.

St. Luke's.—172, 174, and 176, Goswell-rd., u.t. 70 yrs., g.r. 70*l.*, r. 173*l.* 6*s.* 8*d.*	1,400
Clapton.—60 and 62, Downs Park-rd., u.t. 62½ yrs., g.r. 14*l.* 14*s.*, r. 110*l.*	1,240
Holloway.—457, Holloway-rd., u.t. 30 yrs., g.r. 8*l.* 10*s.*, e.r. 85*l.*	550

By J. A. & W. THARP.

Leytonstone.—Norman-rd., six plots of building land, f.	425

January 12.—By HUGH SWORDER (at Epping).

Epping Upland, Essex. — "Takeley's" and "Shingle Hall" Estate, 324a. 3r. 38p., f., r. 372*l.*	7,100
January 15.—By PALMER & CO. (at Brighton).	
Brighton, Sussex.—133, Marine-parade, f., e.r. 200*l.*	2,010

By POWELL AND POWELL (at Bath).

Bath, Somerset. — Weston-road, "Westfield House," f., e.r. 85*l.*	1,450
January 16.—By DEBENHAM, TEWSON, & CO.	
Pimlico.—44, Gillingham-street, area 16,250 ft., a profit rental of 470*l.* for 25¾ yrs.	4,500
South Kensington.—20, Bolton-gardens, u.t. 71 yrs., g.r. 30*l.*, r. 300*l.*	3,050

By ROGERS, CHAPMAN, AND THOMAS.

Westminster.—42, Bessborough-st., u.t. 34 yrs., g.r. 11*l.*	570

By WREFORD & HARDING.

Chelsea.—52 to 58 (even), Christchurch-st., u.t. 42½ yrs., g.r. 12*l.* 16*s.*, r. 119*l.*	1,240
Pimlico.—32, Commercial-rd., u.t. 14 yrs., g.r. 5*l.*, r. 32*l.*	180

January 17.—By J. BOTT & SONS.

Herne Hill.—21, Romola-rd., u.t. 58½ yrs., g.r. 9*l.* 9*s.*, r. 40*l.*	325
Anerley.—129, Marlow-rd., u.t. 77 yrs., g.r. 6*l.* 10*s.*, r. 27*l.*	220
Clerkenwell.—1, 2, and 3, John's-mews, also 1 g.r. 105*l.*, u.t. 16 yrs., g.r. 12*l.*	540
Dulwich.—200 and 202, Barry-rd., u.t. 79 yrs., g.r. 14*l.*, r. 70*l.*	710
Blackheath.—4, Beaconsfield-buildings, u.t. 24½ yrs., g.r. 80*l.*, r. 217*l.*	1,325

January 18.—By MARK LIELL & SON.

Leyton.—2 and 4, Calderon-rd., u.t. 82 yrs., g.r. 12*l.*	480
29 and 31, Sedgwick-rd., u.t. 79 yrs., g.r. 8*l.*	420

January 19.—By RIDER & SONS.

Notting-hill.—4, St. Michael's-gardens, u.t. 70 yrs., g.r. 10*l.*, e.r. 50*l.*	400
299 and 301, Latimer-rd., u.t. 63½ yrs., g.r. 11*l.*	605

By A. J. SHEFFIELD.

Stepney.—134, White Horse-st., f., r. 48*l.*	580
Canning Town.—6, Ford's Market, u.t. 99 yrs., g.r. 10*l.* 10*s.*	250
Old Ford.—30, Auckland-rd., f., r. 36*l.* 8*s.*	455
Poplar.—49, Bow-lane, f., r. 36*l.*	625
111, Brunswick-rd., u.t. 39 yrs., g.r. 3*l.* 10*s.*	215

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum: yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard.

PRICES CURRENT OF MATERIALS:

WOOD.*

Per Petersburg standard hundred.

	£	s.	d.	£	s.	d.
White Sea: first yellow deals	18	0	0	21	10	0
Second do.	16	0	0	18	0	0
Third do.	13	10	0	15	0	0
Battens, 40s., 30s., and 15s. less respectively.						
Petersburg: first yellow deals	15	0	0	17	10	0
Second do.	12	0	0	13	10	0
Battens, 30s. and 20s. less respectively.						
Petersburg, white deals	10	10	0	12	10	0
Do. white battens	9	0	0	10	0	0
Riga, white deals	9	10	0	10	10	0
Swedish mixed yellow deals	16	0	0	18	0	0
Third do.	14	0	0	16	0	0
Fourth do.	12	0	0	13	0	0
Fifth do.	11	0	0	12	0	0
Battens, 30s., 20s., and 10s. less respectively.						
Whitewood, 10 to 20 per cent. less.						
Finnish unsorted yellow deals	11	0	0	11	10	0
Battens, 10s. and 5s. less respectively.						
Whitewood, 5 to 10 per cent. less.						
Norwegian second yellow battens	8	0	0	8	10	0
Third do.	7	15	0	8	0	0
Fourth do.	7	10	0	7	15	0
Whitewood, 10s. less.						
Danzig, Crown Deck deals, per 40 ft. 3 in.	0	15	0	1	5	0
Brack	0	12	0	1	0	0
St. Lawrence Pine deals, &c., per P.S.H.:—						
1st, Bright and Dry, regular sizes	20	0	0	27	0	0
" " oddments	13	0	0	20	0	0
2nd " regular sizes	15	0	0	17	10	0
" " oddments	10	0	0	14	0	0
3rd " regular sizes	9	0	0	11	0	0
" " oddments	7	10	0	9	10	0
4th " regular sizes	8	0	0	9	0	0
" " oddments	7	0	0	8	10	0
St. Lawrence Spruce deals, &c.						
First, regular sizes	9	10	0	12	10	0
Second "	9	0	0	9	10	0
Third "	8	15	0	9	0	0
Fourth "	8	0	0	8	10	0

* The prices named are for the wood as imported and anded in the docks. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered
Childrens' Homes	Luton Union	20 Guineas	Feb. 22
*School, Public Library, Fire Station, &c.	Eastbourne Corporation	50*l.*; 30*l.*; and 20*l.*	May 1
*Design for Interior of a Room	British Charrier Wood Carving Co.	100 Guineas	No date

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c., Supplied by	Tenders to be delivered
Portland Cement (8,000 tons)	Oldham Town Council	S. A. Pickering, Civil Engineer, Borough Surveyor, Oldham	Jan. 30
Coastguard Buildings, Flamborough Head, Yorks.	Admiralty	Director of Works, 21, Northumberland-avenue, W.C.	do.
Pair Villas, George Mellor-road, Ashton-under-Lyne	.....	W. H. George & Son, Architects, Old-square, Ashton-under-Lyne	do.
Additions to Schools, Combe Down, Bath	.....	W. J. Willcox, Architect, 1, Belmont, Bath	do.
*Roman Catholic Church at Lowestoft	.....	G. & R. P. Baines, 5, Clement's Inn, W.C., & F. W. Richards, Lowestoft	Jan. 31
Surveyor's Materials	Plymouth Corporation	J. Paton, Borough Engineer, Municipal Offices	do.
Four Cottages, Woodside	.....	W. Fairless, Architect, Ryton-on-Tyne	do.
Church, Boat of Garten, N.B.	.....	A. Mackenzie, Architect, Kingussie	do.
Additions to House, Altyre, N.B.	.....	Reid & Wittet, Architects, Elgin	do.
Alterations to Workhouse	Cannock (Staffs.) Guardians	A. Veall, Architect, Wolverhampton	do.
*Additions to School, Two Waters	Hemel Hampstead School Board	W. A. Fisher, 36, Marlowes, Hemel Hampstead	Feb. 1
Six Houses, St. George's-road, Barnsley	.....	Wade & Turner, Architects, 10, Pitt-street, Barnsley	do.
Wall and Railings, Cathays Park	Cardiff Corporation	W. Harpur, Civil Engineer, Town Hall	do.
Whinstone (3,000 tons)	Escrick (Yorks.) R.D.C.	Surveyor, 1, Museum-street, York	do.
Warehouse, Water-lane, Bradford	.....	Milnes & France, Architects, Bradford	do.
Cast-Iron Water Mains, &c.	Ashby-de-la-Zouch U.D.C.	G. H. Lilley, Surveyor, Council Offices	do.
Two Houses, Stables, &c., Bridlington Quay	Mr. J. Slater	J. Earnshaw, Architect, Wellington-road, Bridlington Quay	do.
Cast-Iron Pipes and laying, Colinton	Edinburgh Water Trustees	Leslie & Reid, Civil Engineers, 72A, George-street, Edinburgh	do.
*Broken Granite	Bethnal Green Vestry	F. W. Barratt, Vestry Hall, Church Row, Bethnal Green	do.
*Additional Offices, Derby Station	Midland Railway Company	Engineer's Office, Derby Station	Feb. 2
*Sinking Artesian Wells	Fulham Vestry	W. J. H. Denselow, Town Hall, Walham Green, S.W.	Feb. 3
Septic Tanks, Filters, &c., at Sewage Works	Exeter Corporation	G. R. Shorto, Town Offices, Exeter	do.
Broken Granite	Norfolk County Council	T. H. B. Heslop, Civil Engineer, County Surveyor, Norwich	do.
National Schools, Queenstown, Ireland	Rev. Dr. Brown	S. F. Hynes, Architect, 21, South Mall, Cork	do.
Cast-Iron Pipes (600 tons)	Warrington Corporation	J. Deas, Civil Engineer, Bank House, Warrington	do.
Sewers and Water Mains	Crail (N.B.) Commissioners	Belfrage & Carfrae, Civil Engineers, 1, Erskine-place, Edinburgh	Feb. 5
Road Works, Old Park-road, Roundhay, Leeds	.....	E. J. Silcock, Civil Engineer, 10, Park-row, Leeds	do.
Tar Paving	Malden and Coombe U.D.C.	T. V. H. Davison, Civil Engineer, New Malden	do.
Stoneware Sewer, Kingston-road	do.	do.	do.
Fifty Cottages	Bargoed Artisans' Cottage Co., Ltd.	G. Kenshole, Architect, Duffryn House, Ystrad Mynach	do.
Brick Gasholder Tank	Clacton-on-Sea Town Council	S. Francis, Engineer, Town Hall	do.
*Workhouse and Infirmary	Hunslet Union	J. H. Morton, 50, King-street, South Shields	do.
*Private Streets	Willesden District Council	O. Claude Robson, Public Offices, Dyne-road, Kilburn	Feb. 6
*Road Materials, Royal Parks	H. M. Office of Works	Office of Works, Storey's Gate, S.W.	do.
Memorial Hall, Lister Park	Bradford Corporation	Simpson & Allen, Archts., 3, Verulam-buildings, Gray's Inn, W.C.	do.
Store, Fore-street	Lower Darwen Co-op. Soc., Ltd.	Woods & Thackeray, Architects, Darwen	do.
*Making-up Bradgate-road	Lewisham Board of Works	Surveyor's Department, Town Hall, Catford	do.
*Making-up Honley-road	do.	do.	do.
*Making-up Doggett-road	do.	do.	do.
*Making-up Ackroyd-road	do.	do.	do.
*Making-up Nelgarde-road	do.	do.	do.
*Cement, Lime, Ballast, Sand, Paving, and Curo	St. Saviour's Board of Works	G. R. Norrish, Board of Works Offices, Emerson-st., Bankside, S.E	Feb. 7
*Works and Supply of Stores	Chiswick U.D.C.	A. Ramsden, Sutton Court, Chiswick	do.
Kerbs and Setts	Ashton-in-Makerfield U.D.C.	J. W. Liversedge, Surveyor, Council Offices	do.
Hartshill Stone	Bicester R.D.C.	C. W. Brabant, Surveyor, South View	do.
*Electricity Works	Middleton Corporation	Lacey, Clirehugh, & Sillar, 2, Queen Anne's-gate, S.W.	do.
*Iron Staircases and Doors	Langport Guardians	.....	Feb. 8
Heating the Guildhall	New Windsor Town Council	Borough Surveyor, Helena-road, Windsor	do.
Paving, Kerbing, &c. Chichester-road	Seaford (Sussex) U.D.C.	Surveyor, 3, Clinton-place, Seaford	do.
Post Office, Rugby	Office of Works	Secretary, Office of Works, Storey's Gate, S.W.	Feb. 9
Refuse Destructor	Burnley U.D.C.	J. Gregson, Surveyor, Council Chambers, Padiham	Feb. 10
Hartshill Road Metal	Banbury R.D.C.	E. L. Fisher, Horse Fair, Banbury	Feb. 12
Fire Station, Tithebarn-street	Preston Corporation	Borough Surveyor, Town Hall	do.
Ironwork (Contract No. 20)	Edinburgh and Leith Corporation	W. R. Herring, Engineer, New-street, Edinburgh	do.
*Supplies (various)	West Ham County Council	See Advertisement	do.
Electric Lighting Works	Stoke-on-Trent Guardians	G. R. Peers, Engineer, 96, Deansgate, Manchester	do.
Cast-Iron Pipes and Laying, Bickley, Salop	Malpas R.D.C.	J. A. Davenport, Civil Engineer, 152, Hospital-street, Nantwich	Feb. 13
Whinstone, Granite, &c.	South Shields Corporation	S. E. Burgess, Civil Engineer, Chapter-row, South Shields	do.
Public Library and Institute, Gosport	Alverstoke District Council	A. W. S. Cross, Architect, 58, Conduit-street, W.	Feb. 14
New Road, near Jingling Gate, co. Durham	Chester-le-Street R.D.C.	D. Balfour & Son, C.E., 3, St. Nicholas'-bldgs. Newcastle-on-Tyne	do.
*Alterations and Additions to Schools at Staines	Egham School Board	J. A. Engall, Clarence-street, Staines	do.
*Boys' School	St. Thomas School Board	Council Offices, Cowick-street, St. Thomas, Exeter	Feb. 19
*Ten Blocks of Artizans' Dwellings, Westminster	London County Council	Architect's Department, 17, Pall Mall East, S.W.	Feb. 22
*Warming	Walthamstow School Board	W. R. Longmore, Architect, 7, Great Alie-street, E.	Feb. 27
Surveyor's Materials	New Windsor Corporation	Borough Surveyor, Helena-road, Windsor	do.
Services and Supplies	Westminster Vestry	G. R. W. Wheeler, Town Hall, Westminster, S.W.	Feb. 28
Additions to House, &c, Clarendon-road, Morecambe	.....	Walker & Collinson, Architects, Bank-chambers, Morecambe	See advt.
Seven Cottages, Chopwell	Blaydon Indus. & Prov. Soc., Ltd.	Liddle & Browne, Architects, Mosley-street, Newcastle-on-Tyne	No date
Twenty-nine Houses, Ashford	.....	P. G. Challiss, 103, Stondon Park, Brockley, S.E.	do.
17 Cottages, Blandford-st. West, Ashton-under-Lyne	Mr. S. Lomas	E. Garside, Architect, Town Hall Chambers, Ashton-under-Lyne	do.
Twelve Houses, Ashton-under-Lyne	J. Hargreaves	do.	do.
School and Church Chancel, Whitley Bay	Trustees	Page & Son, Architects, King-street, South Shields	do.
Sewering, &c., Three New Streets, Laisterdyke	Mr. E. Hine	W. J. Beall, Surveyor, 23, Bank-street, Bradford	do.
Rebuilding Low Fold Mills, East-street, Leeds	Messrs. J. G. Roper & Sons	G. F. Bowman, Architect, 5, Greek-street, Leeds	do.
Workmen's Houses, Cowdenbeath, N.B.	.....	J. Houston, Architect, Dunfermline	do.
Additions to Northgate House, Darlington	Messrs. Jaques & Jaques, Limited	Knight & Chatters, Architects, Cheltenham	do.
Main Sewers, &c., Blackhall Mill, Durham	.....	L. H. Armour, 16, West-street, Gateshead	do.
School Houses, Stocksfield-on-Tyne	Broomley & Bywell (U.D.) Sch. Bd.	J. W. Rounthwaite, Architect, 13, Mosley-st., Newcastle-on-Tyne	do.
Rebuilding Warehouse, Bradford-road, Dewsbury	Messrs. E. Townsend & Co.	F. W. Ridgway, Architect, Dewsbury	do.
Additions to House, &c., Ipswich	Messrs. Tollemache	J. S. Corder, Architect, Wimborne House, Ipswich	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*Clerk of Works	Oswestry Town Council	.....	Feb. 2
*Clerk of Works	Southampton County Council	3*l.* per week	Feb. 4
*Surveyor's Clerk	Plumstead Vestry	2*l.* per week	Feb. 5
*Draughtsman	Hackney Vestry	2*l.* 2*s.* per week	Feb. 6
*Clerk	Limehouse Board of Works	1*l.* 5*s.* per week	Feb. 12
*Engineering Assistant	Huddersfield Corporation	120*l.* per annum	Feb. 14

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv. vi. viii. x. & xx. *Public Appointments, pp.* xvi. & xx.

PRICES CURRENT—*continued.*

	£	s.	d.	£	s.	d.
Fillets and battens at 20s., 10s., 6d., and 5s. less respectively.						
New Brunswick Spruce deals, &c.	8	10	0	9	0	0
Battens, battens, and fourths ..	8	0	0	8	10	0
United States pitch pine planks and boards ..... per square	10	0	0	13	0	0
Prepared Boards,						
6 by 6½ and 7 in. 1st yellow		10	0		15	0
,, ,, 2nd ,, ...		9	6		12	0
6 by 6½ and 7 in. 1st ,, ...		9	6		11	0
,, ,, ,, white		8	0		9	6
,, ,, 2nd yellow		8	0		10	0
,, ,, ,, white		7	0		8	0
6 by 6½ & 7 in. 1st & 2nd yellow		7	9		9	0
,, ,, ,, white		7	6		8	6
6 by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded)		8	0		9	6
6 by 6½ and 7 in. 2nd yellow and white (ditto)		7	6		8	6
6 by 6½ and 7 in. 1st yellow and white (ditto)					7	6
6 by 6½ and 7 in. 2nd yellow and white (ditto)		6	0		7	0
Narrower widths at 10 per cent. less.						
Inferior quality at 15 per cent. less than second.						
Memel and Memel Fir Timber—per load						
Best middling	3	15	0	4	0	0
Good middling and Second.....	3	5	0	3	10	0
Common middling.....	3	0	0	3	5	0
Undersized	3	0	0	3	5	0
Swedish and Norwegian Balks	2	10	0	2	15	0
Baltic Oak Timber—						
Dantzig and Stettin—Large.....	3	5	0	4	5	0
Small.....	2	10	0	3	5	0
Quebec Timber per load						
Yellow Pine.....	4	15	0	6	5	0
Oak	4	12	6	6	15	0
Elm	4	2	6	4	7	6
Ash	3	7	6	4	2	6
Birch.....	3	7	6	5	15	0
New Brunswick, &c., Birch	3	2	6	3	12	6
American Pitch Pine Timber.....	3	17	6	4	10	0
Wainscot, per log, 18 cubic ft.—						
Crown (Eng. & Dutch) } nominal {	3	7	6	4	10	0
Brack ..... } nominal {	2	12	6	3	12	6
Lathwood, per cubic fathom—						
Petersburg	4	0	0	6	10	0
Riga and Danzig	4	10	0	5	10	0
Norway Poles, per ft. run	0	0	1	0	0	1½
Oak Staves, per mille full size pipe						
Memel, Crown	220	0	0	232	0	0
Brack	190	0	0	200	0	0
Dantzig	165	0	0	175	0	0
Bosnia, single Barrel (nominal)..	28	0	0	30	0	0
United States, Pipe	37	10	0	45	0	0
Hogshead, extra heavy and double extra.....	32	0	0	35	0	0
Indian Teake .....per load	11	10	0	17	0	0
British Guiana Greenheart	0	0	0	8	0	0
Mahogany, per foot superficial—						
Honduras, cargo average	0	0	5	0	0	6½
Nicaragua, do.	0	0	4½	0	0	5½
Tabasco, do.	0	0	4½	0	0	6½
Mexican, do.	0	0	4	0	0	4½
Panama, do.	0	0	3	0	0	4
African, do.....	0	0	3½	0	0	5½
Cuba, do.....	0	0	6	0	0	8
St. Domingo, do.	0	0	5	0	0	7½
Do. Curls (good to prime)	0	0	9	0	1	3
Walnut, American (logs).....	0	2	3	0	4	6
Do. do. (planks and boards)	0	2	0	0	7	6
Italian, per foot superficial	0	0	3	0	0	7½
Black Sea, per ton.....	6	0	0	12	0	0
Satin Walnut (logs) per foot cube..	0	1	0	0	1	3
,, (planks and boards)	0	2	0	0	2	9
Sequoia (Californian redwood), per foot cube	0	1	9	0	2	0
Whitewood, American .....(logs)	0	1	3	0	1	6
,, ,, (planks and boards)..	0	2	6	0	2	9
Quartered oak ,, ,, ..	0	2	3	0	4	0
Laurel pine.....(logs)	0	1	9	0	2	0
,, ,, ...(planks)	0	2	3	0	2	9
Jarrah .....(planks)	0	2	0	0	2	3
Lancewood spars each, fresh and large	0	3	0	0	8	0
Lancewood spars, ordinary to fair..	0	4	0	0	5	0
Degame spars.....	0	8	0	0	10	0
METALS.						
Iron—Pig, in Scotland ..... ton	3	8	1½	0	0	0
Bar, Welsh, in London	9	0	0	9	15	0
Do. do. at works in Wales.....	8	10	0	9	0	0
Do. Staffordshire, in London....	9	15	0	11	15	0
Copper—British cake and ingot ..	76	0	0	77	0	0
Best selected	77	0	0	78	0	0
Sheets, strong.....	80	0	0	82	0	0
Chili bars.....	70	12	6	0	0	0
Yellow Metal .....lb.		6½d.			7d.	
Lead—Pig						
Spanish .....ton	16	15	0	0	0	0
English Com. Brands	17	0	0	0	0	0
Sheet, English, 6 lbs. per sq. ft. and upwards	18	0	0	0	0	0
Pipe	18	10	0	0	0	0
Zinc—English sheet .....ton	24	0	0	0	0	0
Vieille Montagne	26	0	0	0	0	0
Spelter	20	10	0	0	0	0
Tin—Straits	117	15	0	0	0	0
Australian	118	0	0	118	10	0
English Ingots	122	0	0	123	0	0
Banca	0	0	0	0	0	0
Billiton	0	0	0	0	0	0
OILS.						
Linseed .....ton	23	12	6	0	0	0
Cocoanut, Cochin	29	15	0	0	0	0
Do. Ceylon	26	15	0	0	0	0
Palm, Lagos	27	10	0	0	0	0
Rapeseed, English, pale	24	15	0	0	0	0
Do. Brown	23	5	0	0	0	0
Cottonseed ref.	19	10	0	20	0	0
Olein	17	5	0	19	5	0
Lubricating U.S.	0	8	0	0	0	0
Do. Black	0	7	6	0	0	0
Tar—Stockholm.....barrel	1	6	6	0	0	0
Archangel.....	1	0	0	0	0	0
Turpentine	38	12	6	38	15	0

PRICES CURRENT—*continued.*

BRICKS, &c.

	s.	d.				
Hard Stocks	36	6	per thousand alongside, in river.			
Rough Stocks....	32	6	,,	,,	,,	,,
Grizzles.....	32	6	,,	,,	,,	,,
Smooth Bright Facing Stocks .	62	0	,,	,,	,,	,,
Shippers	45	6	,,	,,	,,	,,
Fletton	31	6	,,	,,	,,	,,
Red Wire Cuts ..	34	0	,,	,,	at railway depôt.	
Best Fareham Red	71	6	,,	,,	,,	,,
Best Blue Pressed Staffordshire ..	86	0	,,	,,	,,	
Best Stourbridge Fire Bricks	84	0	,,	,,	,,	,,
Best White Glazed Bricks—Quoins and Bullnose..	340	0	,,	,,	,,	,,
Headers and Stretchers .. .	240	0	,,	,,	,,	,,
Double Headers	320	0	,,	,,	,,	,,
Best Dipped Salt Glazed—Quoins and Bullnose ..	260	0	,,	,,	,,	,,
Headers and Stretchers	220	0	,,	,,	,,	,,
Double Headers	260	0	,,	,,	,,	,,
Seconds Quality White and Salt Glazed.....	40	0	per thousand less than best.			

	s.	d.	
Thames and Pit Sand	7	0	per yard, delivered.
Thames Ballast	6	0	,, ,,
Best Heavy Portland Cement..	36	0	per ton ,,
Best Ground Blue Lias Lime..	23	0	,, ,,

NOTE.—The cement and lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 12s. 6d. per yard, delivered.

STONE.

	s.	d.			
Ancaster in blocks	2	0	per ft. cube, deld. rly. depôt		
Beer ,, ...	1	7	,,	,,	
Grinshill ,, ...	1	10	,,	,,	
Red Corsehill in blocks	2	5	,,	,,	
Red Mansfield ,,	2	4½	,,	,,	
Hard York ,,	2	10	,,	,,	
,, ,, 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	2	7	per ft. super. at rly. depôt.		
,, ,, 6 in. Rubbed ,,	2	10½	,,	,,	
,, ,, 3 in. sawn, both sides slabs (random sizes)	1	3	,,	,,	
,, ,, 3 in. self-faced ,,	0	8½	,,	,,	

TILES.

	s.	d.	
Best plain red roofing tiles..	40	6	per 1,000 at rly. depôt.
hip and valley tiles....	3	6	per doz. ,, ,,
Best Broseley tiles	46	6	per 1,000 ,, ,,
hip and valley tiles....	3	8	per doz. ,, ,,

SLATES.

in.	in.	£	s.	d.		
20 × 10	best blue Bangor..	11	5	0	per 1000 of 1200	at ry. dep
16 × 8	,, ,, ..	6	2	6	,,	,,
20 × 10	best unfading green	11	0	0	,,	,,
16 × 8	,, ,,	6	12	0	,,	,,
20 × 10	best blue Portmadoc	10	18	0	,,	,,
16 × 8	,, ,,	6	0	0	,,	,,

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABINGDON.—For the construction of a reservoir, Milton, for the Rural District Council. Mr. Geo. Winship, C.E., Borough-buildings, Abingdon :—

J. Peattie	£1,086 0 0	Greek-street Engineering Co.	£838 14 3
Meredith & Co.	890 9 5	Cadel Bros.	830 0 0
G. A. Tucker	888 0 0	W. H. Randall*	789 0 0

BIRMINGHAM.—For additions, &c., to coachman's house at the workhouse, for the Guardians. Mr. W. H. Ward, architect, Paradise-street, Birmingham :—

F. Nicholls	£259 0	J. Atkinson*.....	£235 0
Hunt Bros.	255 13	G. B. Clarke.....	228 0
W. Statham	240 0	[All of Birmingham.]	

BRIDLINGTON QUAY.—For the erection of a pair of semi-detached and four dwelling-houses, Bessingby Estate, for Mr. A. G. W. Wright. Mr. J. Earnshaw, architect, Carlton House, Bridlington Quay :—

E. Corner	£2,106 0 0	Smallwood & Shaw	£1,591 18 9
C. Limon	1,956 9 0	A. Gardam*..	1,509 18 8
W. Barnes	1,680 0 0		
E. Wilson	1,591 13 11		

[All of Bridlington.]

CARLISLE.—For the erection of workshops, &c., London-road, for Mr. J. Tiffen. Mr. H. H. Hodgkinson, architect, Scotch-street, Carlisle :—

Builders.—Ward & Topping, Kingstown, Carlisle	£378 17
Joiner.—W. C. Armstrong, Drover's-lane, Carlisle	460 0
Plasterers.—Cannon Bros.	127 0
Plumber.—N. Forster, Lowther-street, Carlisle	56 0
Painters.—Pearson & Baynell, Grapes-lane, Carlisle	25 0
Slater.—D. Armstrong, Finkle-street, Carlisle.....	8 5

DURHAM. — For making-up private streets in the parish of Neville's Cross, for the Durham Rural District Council. Mr. Geo. Gregson, Surveyor to the Council :—

Hawthorn-terrace.

Thos. Coates..	£1,149 12 0	J. G. Bradley*..	£873 9 8
John Carrick..	924 14 5		

Back Hawthorn-terrace.

Thos. Coates ..	£323 13 7	John Carrick* ..	£244 9 2
J. G. Bradley ..	279 7 7		

[All of Durham.]

GLOUCESTER.—For the erection of a coffee house and club for the St. James' (Gloucester) Working Men's Club and Coffee House Company, Limited. Mr. Alfred J. Dunn, architect. Quantities by the architect :—

J. Simmons	£2,660	A. J. Dolman	£1,955
W. Jones	2,130	Freeman & Jones ..	1,955
J. Williams	1,989	Bailey & Dean*	1,899

[All of Gloucester.]

GRAYS.—For the erection of children's cottage homes at Grays, Essex, for the Guardians of the Whitechapel Union. Mr. Christopher M. Shiner, architect, 3, Bond-court, Walbrook, E.C. :—

G. Sharpe	£12,120	H. R. Rous	£10,900
F. Minter	11,869	W. Potter	10,836
C. Wall.....	11,600	J. Brown	10,740
F. & E. Davey....	11,080	J. Hammond*	10,684

GUILDFORD.—For the erection of schools, Sandfield, for the School Board. Mr. A. J. Sturges, architect, 25, High-street, Guildford. Quantities by Messrs. Franklin & Andrews, Ludgate-hill.

Potter Bros.....	£18,500	Gough & Co.	£16,354
John C. Lee.....	17,651	Higlett & Hammond	15,999
Frank Milton	17,162	A. Johnson	14,945
Ernest West	16,900	Mitchell Bros.,	
P. C. May	16,880	Shalford, near	
H. Hutchinson ..	16,860	Guildford*	14,464
Stanley Ellis	16,389		

HARPENDEN.—For erecting a pair of villas, Spencer road, for Mr. T. G. Hale. Mr. Percival C. Blow, architect, St. Albans and Harpenden :—

E. Dunham	£1,275	Hall*	£965
Philips & Blake	995		

HEREFORD.—For pulling down and rebuilding King's Head Hotel, Hereford, for the Hereford and Tredegar Breweries Company, Limited. Mr. G. H. Godsell, F.S.I., architect, Hereford :—

Beavan & Hodges	£3,643 0	Bowers & Co. ..	£3,498 10
James Davies	3,562 0	Lewis & Co.*....	3,480 0

[All of Hereford.]

HEREFORD.—For mineral-water works and beer stores, for Mr. T. W. Allen, Black Swan Hotel, Hereford. Mr. G. H. Godsell, architect, Hereford :—

Andrews & Son.	£865 0 0	Lewis & Co.....	£792 0 0
James Davies ..	824 10 0	Bowers & Co.† .	751 17 6

[All of Hereford.]

HEREFORD.—For rebuilding the Imperial Tavern, Hereford, for the Hereford and Tredegar Breweries Company, Limited. Mr. G. H. Godsell, architect, Hereford :—

Building Contract.

J. Davies	£4,946 4 6	W. P. Lewis & Co.	£4,794 0 0
Beaven & Hodges	4,902 15 0	W. Bowers & Co.*	4,694 2 0

Decorating, Painting, and Plumbing.

Alfred Dutton..	£525 0 0	J. C. Vaughan*	£433 3 6
H. Barber	479 0 0		

HEREFORD.—For pulling down and rebuilding the Three Crowns hotel, Eign-street, Hereford, for the Hereford and Tredegar Breweries Company, Limited. Mr. G. H. Godsell, architect, Hereford :—

Building Contract.

W. Bowers & Co.	£3,010 0	Reuben Taylor ..	£2,745 0
W. P. Lewis & Co.	2,949 10	W. Powell	2,697 0
Beavan & Hodges	2,940 15	C. Cooke (withdrawn).....	2,160 0
James Davies* ..	2,768 0		

Plumbing and Decorating.

J. C. Vaughan	£379 0	H. S. Barber*	£360 0

[All of Hereford.]

HEREFORDSHIRE (Weobley).—For new stables at Weobley Vicarage. Mr. G. H. Godsell, architect, Hereford :—

W. Gibbons, Weobley*	£242

[*See also next page.*

HEREFORD. — For alterations to Mitre Hotel, Hereford. Mr. G. H. Godsell, architect :—
J. Davies, Hereford* £595 4

HUDDERSFIELD.—For the erection of children's homes, Ant-lane, for the Guardians. Mr. J. William Cocking, architect, Cloth Hall-street, Huddersfield :—

Masonry.
John Halliwell, Prescott Farm, Stainland, Halifax £802 10 0

Grey Slating.
John Halliwell, Prescott Farm, Stainland, Halifax 126 7 0

Concreting.
John Cooke, Littleroyd, Huddersfield 85 2 4

Joinery.
Matthew Hirst, Holywell Green, Halifax 380 0 0

Plumbing.
Milnes & Garside, Upperhead-row, Huddersfield 230 0 0

Plastering.
J. R. Crowther, Stainland, Halifax ... 81 10 0

Painting.
Wood & Atkinson, West Parade, Huddersfield 35 0 0

Ironmongery.
T. A. Heaps & Co., Westgate, Huddersfield 25 5 0

Sixty-two tenders received for various trades. Lowest accepted. Highest, £3,030. Architect's estimate, £2,000.

KING'S LYNN (NORFOLK).—For alterations and additions to St. Nicholas Schools. Mr. Herbert J. Green, architect and surveyor, Norwich :—

Renaut Bros.	£595 10	R. W. Fayers	£549 13
Robert Dye	595 0	Bardell Bros.	525 0
W. H. Brown	593 0	W. F. Smith†	490 13

[All of King's Lynn.]

LLANGOLLEN. — For additions, &c., at Court-house :—
T. A. Jones .... £515 0 0 | Evans & Son, Llangollen* .. £510 18 6

LLANGOLLEN.—For additions, &c., to Court-house, for the County of Denbigh. Mr. R. Lloyd Williams, County Surveyor, Denbigh :—
T. A. Jones £515 1 0
Evans & Sons, Llangollen* 510 18 6

MORLEY (Yorks).—For the erection of a mill, Bantamgrove, for Mr. David Bradley. Messrs. T. A. Buttery & S. B. Birds, architects, Queen-street, Morley :—

Masonry.—Clegg & Sons, Wesley-street, Morley	£1,485 0 0
Joinery.—Clegg & Sons, Wesley-street, Morley	1,065 0 0
Plastering.—E. Wilson, Westfield-road, Morley	115 0 0
Slating.—Atkinson & Son, Whitehall-road, Leeds	140 0 0
Plumbing.—Wm. Anty, Chapel-hill, Morley	123 3 3

LONDON COLNEY.—For alterations and additions to the "Bell." Mr. Percival C. Blow, architect, 7, London-road, St. Albans and Harpenden :—
C. Miskin ..... £725 | Boff Bros.† £662

OSWESTRY.—For extensions of Market Buildings, construction of an underground convenience, and other work. Mr. G. William Lacey, Borough Engineer and Surveyor. Quantities by Mr. A. Bremner, Colwyn Bay.

Jones & Evans	£5,794 12 0	Jabez Higgins	£5,188 12 1
E. H. Nicholas	5,751 3 6	W. H. Thomas* (Oswestry) ..	4,990 11 9
Wm. Felton ..	5,495 11 9		

[Borough Engineer's Estimate.... £5,700.]

PRESTON WYNNE (Herefordshire).—For new farm buildings at Lower Town Farm, Preston Wynne, Herefordshire, for the Custos and Vicars of Hereford Cathedral. Mr. G. H. Godsell, architect, Hereford :—
A. Newbold, Bromyard* £755

SOUTHEND-ON-SEA. — For the erection of the Nelson Hotel, Prittlewell, for Mr. J. Berry. Messrs. Greenhalgh & Brockbank, architects, Bank-chambers, Southend-on-Sea. Quantities by the architects :—

Lyle Co.	£4,675	Whur	£3,190
Shelbourne & Co. ..	3,706	Davey & Son, Queen's-road, Southend*	3,147
Davis & Leaney	3,637		
Dupont	3,668		
West	3,447		

WAREHAM (Dorset).—For additions to West Holme, for Mr. W. H. Huddleston. Messrs. Jennings & Goater, architects, Bournemouth :—
Jenkins & Sons ..... £281 | G. Hobbs* £215
Miller & Sons 275

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